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Address

A REVIEW OF SURGICAL PROGRESS.*

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Being kindly invited to open the proceedings of the Section on Surgery and Anatomy of this large assemblage of my American colleagues, I am fully impressed with the high honor thereby conferred on me. This honor is accepted by me with sincere appreciation as an evidence of the great hospitality which distinguishes this country above all others and of which I have had ample proof during my present sojourn, and as a proof as well of the close bond existing between American and German science. An introductory address may primarily be expected to include an extended review of the various branches of surgery, together with an account of the changes and advances which have brought this branch of medicine to its present high standard. A retrospect of this kind can not fail to afford many striking facts and pleasant memories, particularly to those of us who are now more advanced in years and can look back to the conditions of surgery in our youth.

The preantiseptic period we look back on as a distant dream, a dream somewhat unpleasant in character, which we would wish to forget. Surgery at that time groped around in the dark, and, although its intentions always have been the best, the question may naturally arise as to whether its practice produced more harm or benefit to mankind. Since Joseph Lister lifted the veil the progress of surgery has been along well-defined paths, marked by one triumph after another, until now, without fear or favor, both credit and debit sides of the ledger may be thrown open to the inspection of the world.

During recent years, also, there has been no lack of fruitful ideas and discoveries, and as instances of this I need only refer to the still increasing importance of the *x*-rays and to local and spinal anesthesia. Physics, chemistry, physiology and pathology have each extended a helping hand, and surgery, originally founded on uncertain empiricism, has from year to year become more firmly established on a scientific basis.

But it is my object to direct your attention to the future rather than to the past, and I desire to confine my discussion to a limited field rather than to the subject of surgery in general. I refer to a field which surgery has attempted to conquer, but in which it can not as yet be said to have been favored with any marked success. I shall endeavor to present to you certain facts pertaining to the surgical treatment of puerperal pyemia. Although not an obstetrician, I have, nevertheless, had the opportunity of making some observations on septic puerperal cases admitted to the large general hospital with which I am connected. As the division line between surgery and gynecology is entirely artificial, I felt that I need not hesitate to discuss a chapter in gynecologic surgery before this assemblage of surgeons.

The idea of treating pyemic processes which originate from external wounds, by local surgical measures, is not a new one. John Hunter, the foremost surgeon of his day, suggested that the extension of a suppurative thrombosis might be combated by compression of the efferent vein. Lee, in 1865, obtained a cure in two cases of pyemia following cellulitis of the hand by ligature of the cephalic vein; Rigaud, in 1876, in an analogous case, tied off the saphenous vein; Kraussold, in 1877, successfully resected a portion of the femoral vein above a pyemic thrombus, and more recently Hartmann reported a case similar to Lee's.

In former days, when this condition occurred much more frequently, as a general thing, the unfortunate patient was either given up as a hopeless case or the attempt to save life was limited to amputation of the affected limb, which procedure was sometimes successful. Sedillot, Billroth and Neudorfer have all reported cases of this type, and I can recall two instances where amputation was the means of saving the patient's life, in conjunction with the many fatal cases in Langenbeck's clinic.

In the meantime we have got rid of pyemia as a surgical wound infection in our hospitals, and at the present time ordinarily only meet with the otitic and the puerperal varieties of the disease; that is to say, pyemia by infection from the ear or from the uterus. I need not go into details regarding the great importance of the surgical treatment of otitic pyemia first suggested by Zaufal in 1884. This method includes the exposure and clearing out of the thrombosed transverse sinus, together with or without ligature of the jugular vein. Viereck collected 108 cases from the literature which had been subjected to early operation, and he found that in 89 recovery was complete. No difference of opinion exists at the present day with regard to the advisability of early operative interference in every case of pyemic sinus thrombosis following an otitis, and it is only concerning the technical details of the procedure, such as the clearing out of the sinus and ligation of the jugular vein, that opinions vary.

It seems quite natural to ask why this same plan of procedure can not be followed in the treatment of puerperal pyemia, if such brilliant results are obtained in other analogous conditions. There are no marked differences, in the pathologic sense, between these two forms of pyemia. In both we meet with instances of pure thrombophlebitis, and in some cases the lymphatic vessels are involved in the infectious process. The clot formation extends in the same manner in both types, metastatic deposits are liable to occur in both, and the

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bacteriologic findings are likewise identical, in both examination of the circulating blood often may prove negative even in severe cases (Lenharz, Brieger). In both forms of pyemia we may find a diffuse inflammation or a localized abscess in the neighborhood of the thrombus; in the otitic variety, meningitis or cerebral abscess; in the puerperal, peritonitis or abscess of the ovary or of the parametrium. Finally, in either type of pyemia a spontaneous recovery may result, the thrombus becoming organized.

We also meet with the same variability in the clinical picture of puerperal pyemia as are noted in the otitic, which increases the difficulty in diagnosis. In addition to the acute form of the disease, most common in both types of pyemia, we have the less frequent chronic variety, and the cardinal symptom—the recurring chills—also exhibit great variability in both types. In contrast to the typical cases with early and rapidly recurring chills, we find others in which this very important symptom may fail to appear for a long time. Brieger, in one instance, noted a complete absence of the chills and fever, although there was a well-marked thrombophlebitis of the sinus transversus. One of my cases of puerperal pyemia did not experience her first chill until 4½ weeks after delivery, although a suppurative thrombosis of the saphenous vein had been present for two weeks previously and was followed by an extensive thrombosis of the femoral vein and a metastatic abscess in one of the bulbs. Just as in otitic sepsis where chills may be caused by suppuration in the neighborhood of the sinus without any thrombosis of the latter, so they may likewise be produced in puerperal infection by an abscess in the parametrium. Experienced otologists have concluded, therefore, that the diagnosis of sinus thrombosis very often depends on direct exploration of the sinus and its contents. I believe that this conception should also be made to apply to the recognition of the thrombosis in the veins of the uterine plexus, and a correct diagnosis in many cases must await an exposure and exploration of the affected veins.

In view of the many points of similarity between otitic and puerperal pyemia, the statements of various authors with reference to the prognosis are worthy of note. Thus Jansen claims a mortality of 90 per cent. in otitic pyemia without operation, while Opitz admits a mortality of only 55 per cent. for puerperal pyemia, and Curschmann believes that by treatment with antipyrin the death rate may be reduced still further. I am very doubtful whether these favorable figures express the true conditions. They would undoubtedly possess positive value if the thrombi in the pelvic veins had been actually seen in every instance or extracted, this being the case in Viereck's statistics of otitic pyemia referred to above. The uncertainty of the diagnosis, which is quite generally acknowledged, admits the possibility of including cases in which there may have been a puerperal infection, but not a true thrombophlebitis. The mortality figures of Fehling, 72 per cent., and Bumm, 85 per cent., even in reference to the chronic cases, are probably more nearly the correct ones.

Even if the statement were true that only 50 per cent. of the cases of puerperal thrombophlebitis ended fatally, we would still be compelled to regard this affection as one of the most serious and fatal maladies with which womankind may be afflicted. At any rate, such statistics should not stand in the way of any legitimate attempts to better these conditions by appropriate and rational means. Statistics have often been arrayed against new surgical procedures which have in the course of time proven invaluable. Among the surgical measures which have had to combat this opposition may be included laparotomy for the relief of ileus, celiotomy for septic peritonitis and the early operation for appendicitis. Also in reference to these affections, the statement was often made that statistics showed frequent recovery without operation, and the belief became prevalent that the diagnosis was too uncertain in these conditions to warrant such dangerous interference, and that opium gave better results than the knife. Operation for a long time was only permitted as a last resort, and the bad results obtained by following such bad practice seemed to confirm the prevailing view. Not until the necessary courage had developed and the proper opportunity presented itself for early operation was surgery permitted to demonstrate its capabilities.

I am fully convinced that it will be the same in regard to the surgical treatment of puerperal pyemia. At the present time the many unsuccessful attempts at saving patients thus afflicted are counterbalanced by only a limited number of successful cases, but the latter are quite sufficient to show that we are on the right road. No doubt of the efficacy of the treatment can possibly exist in the minds of those who have witnessed the immediate cessation of the chills, the lowering of the temperature and the rapid and plainly evident improvement in the general condition of the patient after ligation of the thrombosed veins in the pelvis.

Sippel was the first to suggest that in doing a hysterectomy for puerperal pyemia the adjacent thrombotic veins might be also removed. Freund, Bumm and myself were the first to perform ligation of these vessels without hysterectomy. Up to the present time, recovery has been reported in 7 cases of puerperal pyemia after this operation. In 1901 I tied off the right internal iliac, the branches of which were all filled with thrombi, in a woman of 35, who presented a chronic pyemia which came on six weeks after abortion and was marked by very severe chills. Four and a half weeks later these returned after having ceased entirely after operation, and then the right ovarian vein was also tied off. The fever then rapidly subsided, and after incising a metastatic abscess which subsequently developed recovery was complete.

Another similar case is reported by Michels, of London. Here the daily chills were likewise severe. Three weeks after the miscarriage had occurred the left ovarian vein, which was filled with soft decomposing thrombi, was tied off about one-half of an inch from its entrance into the renal vein, its wall incised and the cavity cleaned out. No further chills appeared and the patient got well. Bumm, in a case of chronic pyemia, tied off the ovarian and internal iliac vein of one side eight weeks after delivery, and in another case, both ovarian and internal iliac five weeks after delivery. Both patients made a rapid recovery. Haeckel likewise ligated, with good results, all four veins, six and a half weeks after the removal of a hydatid mole. Lenhartz reports a case with frequent chills, in which an infiltration of the lower lobe of the left lung occurred and likewise retinal hemorrhages. Ligature of the thrombosed right internal iliac vein was done eight weeks after abortion had taken place, and, as the chills continued, this was followed by ligation of the right ovarian vein. Eleven days later the patient had recovered. Finally, Bumm was favored with a rapid recovery in a

case of acute pyemia which came on nineteen days after abortion, in which he tied off the ovarian and internal iliac on the right side. It will thus be seen that the hope expressed by me when I published my first successful case of ligature of pelvic veins for chronic pyemia, viz., that acute pyemia could be similarly cured, has already begun to be fulfilled.

The chronic cases are distinguished from the acute by the slower growth of the thrombi. In the chronic type of the disease the thrombotic process, even after the lapse of several weeks, may still remain restricted to the internal iliac and ovarian veins, while in the acute form it rapidly extends up the common iliacs and also backward along the external iliacs and femoral veins as well as to the vena cava. Into the latter it may also extend from the ovarian vein. An extensive thrombosis of this character is not necessarily accompanied by any evidences of stasis, and at the time of operation one may be surprised by a thrombus in the vena cava where none was looked for.

The prognosis in the acute variety can, therefore, only be favorable when an early operation is possible, and early operations as yet have seldom been done. I have not been favored with an opportunity.

It is known, however, that even in the presence of a thrombus in the vena cava spontaneous recovery may follow and that complete obliteration of the lumen of the vein may be succeeded by the development of a sufficiently extensive collateral circulation. It would seem feasible, therefore, in thrombosis of the vena cava, to ligate even this vessel above the site of the process and thus stop the progress of the latter. The vena cava has, moreover, been repeatedly ligated during the extirpation of a renal tumor by Marconi, Bottini and Hartmann, and in no case has any harm resulted. I have, indeed, attempted ligature of the common iliac and the lower section of the vena cava in puerperal thrombosis of these veins. One patient lived six days, another thirteen, and the evidences of stasis were not any more marked after than before the operation. I do not desire by any means to advocate this procedure, for one can scarcely hope to accomplish very much by it; but would strongly urge that in acute cases of pyemia ligation of the ovarian and internal iliac veins might be undertaken at an early period in order to stop thrombosis before entering the common iliac vein and the vena cava. The favorable experiences with cases of acute pyemia following ear infections and the brilliant result obtained by Bumm in the case already referred to seem to afford sufficient justification for this step. In cases where the diagnosis is doubtful, an exploratory incision, which fully exposes the veins so that they may be seen and palpated, seems as clearly indicated as in the presence of a gastric cancer, abdominal injuries or any number of other conditions in which an exploratory operation is done for the purpose of clearing up the diagnosis and in order that surgical assistance may be rendered if possible. Neither an incision into the peritoneal cavity nor an extraperitoneal exposure of the veins of the parametrium through a wound made above Poupart's ligament is a procedure the danger of which need be at all considered in comparison with the greater one which menaces the life of the patient in consequence of the disease itself.

It is not possible to decide at the present time which is the preferable method of exposing these veins; the transperitoneal procedure advocated by Bumm or the extraperitoneal operation chosen by myself. The transperitoneal operation is simpler perhaps. The incision being made within the linea alba and using the high pelvic position, the intestines may readily be pushed back sufficiently to allow of a proper exposure and palpation of the tense cord along the ureter which represents the thrombosed ovarian vein and of the thrombosed venous plexus of the parametrium as well. If the overlying peritoneum is carefully divided, ligation of the vein above the thrombus can be done without much difficulty. In the case of the ovarian vein the ureter is pushed to one side, and in the case of the internal iliac vein the internal iliac artery is put aside in a similar manner. The latter must be done with great care and is not always an easy matter, for the inflammatory induration surrounding the thrombosed vessels binds all these structures closely together and the walls of the vessels themselves are also rendered extremely brittle by the inflammatory process. The danger of the transperitoneal route lies in the possibility of a peritoneal infection by the septic material from the veins, when the latter are opened either by accident or intentionally. For this reason it is also not possible thoroughly to clean out these structures.

The extraperitoneal operation necessitates a much larger wound, especially if not only the internal iliac, but also the ovarian vein requires exposure along its entire length, and is perhaps at the same time more difficult and tedious. The danger to the peritoneum is, however, certainly lessened, although not entirely absent, inasmuch as this structure is liable to tear when making our way into the bottom of the wound. In contrast to this we have the fact that the thrombosed veins may be either partially excised or cleaned out. Experience has not taught the invariable necessity for the latter procedure as practiced by otologists on the sinus; the mere exclusion of the thrombus from the circulation by ligating the vein centrally seems all sufficient for the purpose. As the blood passes over the free edge of the thrombus it becomes impregnated with toxins and laden with bacteria, and it is here that the danger lies. By simply tying off the venous trunk this contamination of the circulating blood by the thrombus ceases.

In doing the extraperitoneal operation, the incision is made as for ligation of the iliac artery or for exposure of the ureter. After cutting through the various intervening layers the peritoneum is exposed. The latter is then carefully pushed back by blunt dissection until the parametrium is reached and the ureter together with the affected veins fully exposed. It may be possible to combine with advantage the intra- and extraperitoneal routes of approach. Future experience alone can decide the practicability of these details of the operation.

Original Articles

THE TREATMENT OF ACUTE INSANITY IN A GENERAL HOSPITAL.*

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The questions pertaining to insanity present themselves to us to-day most forcibly in two aspects: First, its increased frequency and, second, its diminished curability. The increased frequency is a product of the feverish activity of the age in which we live. Events that a

* Read at the International Medical Congress, Lisbon, 1906.

few years ago moved with stage-coach slowness now go with electric speed. Many can not bear up under the stress to which they are subjected and can not adjust themselves to the present complicated environment in which we are all placed, and consequently fall by the wayside. It is less curable because of racial degeneracy, so manifest round about us, due to much the same causes as tend to produce insanity that has impressed its characteristics on many of the present- day psychoses; and, furthermore, because of the difficulty of securing for many of these cases that scientific treatment with sufficient promptness so necessary for their restoration.

If we go back but little more than one hundred years to the days of such eminent physicians and philanthropists as Rush, Pinel and Tuke, we can easily note the mighty strides that have been made in the care and treatment of the insane. They are no longer regarded to-day as they were in the times of those great men as, on the one hand, special recipients of Divine favor; or, on the other, as victims of diabolical possession. The efforts of these men and their associates have raised the unfortunate lunatic to the dignity of the sick, and they are no longer either regarded as saints or chained in dungeons, and in all civilized communities special hospitals for their care and treatment have been constructed. But, unfortunately, the establishment of these splendid institutions has tended to build up a specialty of the most exclusive character in which the general practitioner has no part nor lot, and, indeed, even our medical colleges have quite neglected to give a sufficiently conspicuous place in their curriculum to the teaching of psychiatry, and hence the average practitioner is almost entirely ignorant of these cases, and he is altogether unprepared to care for them properly; and, feeling his incapacity, he seeks as rapidly as possible to be relieved of their responsibility by hurrying the patients to special hospitals. But the delivery of patients even to the hospital is not as prompt as it should be to secure the best results of treatment, for when it is proposed to make such disposition of the patient the family must take the question under advisement for a longer or shorter space of time, and when the conclusion is reached that he must be sent away then come certain necessary court proceedings that are frequently detrimental; and, finally, the long journey often to a special hospital, all of which events are well calculated, in some cases at least, to turn the balance against restoration.

The problem is how to give these patients prompt treatment without any of the exposures already enumerated. I think we are all agreed that home treatment in the great majority of cases will result in failure, and we also appreciate the necessity for a change of environment, radical in character.

I began thirty years ago the treatment of selected cases of acute insanity in general hospitals. Patients were admitted without any legal process just as other sick people were, and from that time until the present I have never been without such cases, and believe the results have been sufficiently satisfactory to urge this plan of treatment on the profession generally.

The question of insanity has rested for ages under a great weight of superstition. We must divest ourselves of any idea of the supernatural in this sickness and place it on the same plane as other diseases. The acute insanities that are especially amenable to general hospital treatment are the autotoxic and exhaustional cases; these are classified as primary dementias, acute confusions, melancholias, and the ordinary manias without degenerative basis. The progressively degenerative forms should not be classed with these cases. Their only proper resting place is the special hospital for the insane.

The treatment that I have used in acute insanity in a general hospital is familiarly known to us all as the Weir Mitchell rest cure. Its fundamentals are a competent nurse, isolation, rest in bed, generous diet, daily massage, bath and faradization, with special attention to elimination by the bowels, kidneys and skin. The first proposition is the selection of a judicious nurse or nurses, which ought not to be difficult in a general hospital, extremely difficult as it is to do anything for these patients in a private house. Isolation must be complete, so far as the family and friends are concerned. Companionship should be limited to the few persons who are necessary for the proper care of the patient. The rest in bed for the first few days should be absolute, and I see no objection to enforcing this rest, if needs be, by mechanical means. The diet should consist of easily digestible and assimilable food, milk and eggs, and meat juice in abundance, and if not taken in sufficient quantities by the patient voluntarily it should be administered by nasal feeding. The form of baths well suited to many of these cases is the hot pack and the sheet rub. For excitable patients the hot pack may be prolonged for hours, followed frequently by subsidence of the excitement and refreshing sleep. In melancholias the sheet rub is an admirable stimulant to the general circulation and promotes the activity of the skin. Massage is of great advantage, judiciously administered, in allaying excitement, in increasing the functional activity of the skin and improving the circulation generally. Intestinal fermentation is frequently present and there are few patients of them who do not need colonic flushings with normal saline solution and the internal use of intestinal antiseptics.

Insomnia is usually a troublesome symptom, and its judicious relief is often a most perplexing problem. All of the sleep-producing remedies are double-edged swords; they cut both ways. In promoting sleep they may derange the general nutrition, and the remedy that seems to be well suited to one case may be absolutely of no avail in another. As one of the characteristics of all of these cases is exhaustion, the hypnotics that are much depressing should be avoided. The following prescription will produce sleep in many cases without cardiac depression:

℞. Veronal ..... gr. xl 2|40
Codein phosphatis ..... gr. iv |24
M. Fiat in pulveres No. viii. Sig.: One at bedtime.

Hyoscin hydrobromate will produce the same result in other persons and not infrequently the three drugs may be combined in the same prescription with great advantage. In the depressive cases the deodorized tincture of opium or the aqueous extract given in repeated doses during the day will secure sleep at night and also relieve the intense psychic pain from which they suffer. When these remedies fail to relieve insomnia, my preference is for chloralamid or trional, and only with very great reluctancy do I use chloral. Anemia when present will yield promptly to the free use of Blaud's pills, freshly prepared. The profound error in metabolism that is a part of the pathogenesis of insanity is sometimes overcome by alteratives, and, in my judgment, the best method with which to accomplish this purpose is the use of chlorid of gold and sodium combined with the resin of guaiac as in the following prescription:

℞. Aurii et sodii chloridi.....gr. iss |10
Pulv. res. guaiaci .....3 iss 6|
M. et div. in caps. No. xxx (dry). Sig.: One before each meal.

In the general consideration of the therapeutics of acute insanity, we must ever be mindful of the necessity to pay close attention to the constitution of the patient. Rheumatism, gout, tuberculosis and syphilis will be recognized more or less by us and will demand special consideration. The rest cure should be followed by a course of judicious exercises, some congenial occupation, and by what may be called education. The patient's mind must be in the most forceful manner directed into normal channels. The treatment above outlined should be continued for at least three months and at the expiration of that time some of the cases will be found to have made rapid progress toward recovery; such being the case the treatment should be continued until this desired end is reached; others at the expiration of three months will be found to show no improvement; the further continuation of the treatment is then not to be desired and they should be provided for in a special hospital for the insane; others will have improved sufficiently at the expiration of this time to make a return to their homes not only possible but desirable and this may be a material assistance in their progress towards recovery.

In conclusion, I desire to emphasize the opinion that many cases of acute insanity can be more certainly and rapidly restored to health in a well-governed general hospital than in any of our best special institutions for the care and treatment of the insane, and I urge on my confrères greater efforts in this direction for the relief of these unfortunate people.

THE PRESENT STATUS OF THE BEDBUG IN THE TRANSMISSION OF HUMAN DISEASES.

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Scientists, medical men and entomologists have demonstrated beyond doubt that fleas, house flies and mosquitoes carry and transmit certain dangerous diseases. Fleas carry bubonic plague; house flies, numerous pathogenic bacteria, including those of cholera, bubonic plague, tuberculosis and typhoid fever, also myasis and even some of the parasitic worms that live in the intestines of man; mosquitoes carry yellow fever and malaria and also that most horrible filarial disease known as elephantiasis. It is not strange, therefore, that at last the bedbug should come in for its share of suspicion and experiment, though rather singular that it should be the last in order.

It is the purpose of this article to point out what is now known regarding the carrying of disease germs by this insect, a question which should be of interest to all, especially those who live in large, crowded cities, where its presence is becoming a serious factor. It is also hoped that in a measure it will serve to arouse the general public against an insect whose very presence is a disgrace to our times, and which is the very personification of all that is foul and filthy, and which, besides, has now become a hidden menace to our social communities. It is indeed remarkable that civilized man, who prides himself on his cleanliness, on the comfort and decency of present-day living, and on his freedom from many diseases hitherto common, and who, in fact, at least pretends if he does not actually feel that the very idea of uncleanliness is abhorrent, should wink at the insinuating presence of such a low-bred pest.

This disgusting creature false modesty "dooms" to ostracism and thereby fosters its safety and increase. Its widespread distribution and its abundance can not be denied; statistics are unnecessary to show this. Suffice it to say that it is surprising, even to an entomologist, to find it as numerous as it is, with all the ready means now available for its certain destruction and considering the fact that man is now civilized.

Although the bedbug has been known for centuries and its literature comprises as high as five hundred and some odd articles, but very little, at present, is really known concerning its habits and life history. On the contrary, much has been conjectured. In addition to this, its host relations are entirely unknown. If it is able to live on the blood of man only, then it is at once seen that its scope in potential transmission of diseases is limited; it could transmit but from man to man. But if it is able to subsist and breed also by attacking the small mammals found associated with man, such as mice and rats, when its preferred host is not conveniently reached by it, then its scope in potential transmission is at once greatly enlarged. It would then be able to carry diseases not only from man to man, but also from animals to man, as the flea does in the case of bubonic plague. It is certain that blood comprises its only food, in spite of what has been stated to the contrary.

Several months ago I had an opportunity of performing a few interesting experiments bearing on this question. Hungry bedbugs, obtained by shaking beds in a large mission house in the city of Washington, were confined with both living and recently dead mice, on which they fed until glutted with their blood. From all appearances they were just as fond of the blood of these mice as they are of that of man, and showed no hesitancy at all in accepting it. It was also indicated that the absence of human blood did not interfere with their continued breeding, which would probably have been the case if the blood of the mice had not proved to be of real food value. The experiments are far from conclusive, however, because of the small scale on which they were performed.

Experiments were also conducted with a closely related species, the fowlbug (*Cimex columbarius Jenyns*), which associates with pigeons and chickens, often in great numbers. It seemed very fond of human blood, readily attacked living mice and eagerly went to young, recently born mice, though the bodies of the latter are cold. "While placing them under the bell-jar the evening before, one of the adults accidentally fell on the body of one of the young mice, which it immediately attacked. When its beak was inserted, the mouse jumped from the pain and a struggle then ensued, the almost helpless little animal trying desperately to dislodge the sucking insect by rolling and kicking. Several times the bug lost its hold, but turned at once and renewed the attack, until at last it obtained a position on the breast of the mouse, between the forelegs, where it was simply impossible for it to be reached. Here it fed until satisfied." These experiments are pregnant with suggestions, viewed in the light of our present knowledge of the relations of certain insects to the transmission of human disease. It may be interesting to note in this connection that no marked differences could be found in the behavior of these two species toward the hosts mentioned in foregoing.

The history of the pathogenic relations of the bedbug is brief and rather obscure. Unlike that of the mosquito,

no romance is intertwined with it, no new martyrs have been made in the cause of science. It has arisen quietly, at first mere conjectures being made at the end of an article which discussed the general pathogenic relations of insects, or generalizations were made including insects of its kind. Gradually, as the knowledge of the rôle played by mosquitoes, fleas and flies (insects closely related to the bedbug by essential habit) became better and more generally known, and their true relations to human diseases determined, medical writers began to assume also that the bedbug played a rôle, at least in part, similar to that of those insects. Brief statements to that effect were made, which from their very nature were not more than mere suggestions. Hence quite a number of years elapsed from the time of the rise of the idea of the transmission of diseases by the mosquito and other sucking and biting insects, and that marking the origin, from analogy, of a similar idea in regard to the bedbug. As has just been intimated, medical men were the first to call attention to this phase of the insect's economy. A complete survey of the world's scientific literature, as far as the bedbug is concerned, will show that the idea has been developed almost entirely by them.

On account of the nature of the publications in which these ideas were brought out, the general public, probably, did not even dream of such a thing, until years afterward, or until within the beginning of the present century. It was not until "consumption's ghastly form" arose, and the popular magazines and newspapers began to tell of this disease, and others as they became prominent, and thus aroused public opinion, within the last two years perhaps, that a vague idea of this insect's probable rôle began to be formed.

Even then, although seemingly tending in that direction, no definite statements were made concerning the bedbug as a carrier of specific diseases, except those made in reference to relapsing fever in a New York magazine early in 1905. This is, apparently, all that the public knew of the matter; the rest was hidden in more or less obscure scientific journals. At various colleges and universities, however, the general idea of the bedbug as a transmitter of disease was brought out by some teachers in class lectures as early as 1898, or earlier, and the practice has now become more common.

In 1887, Metchnikoff, in an article on certain phases of relapsing fever, published in a well known medical journal of Berlin, made general references to the bedbug as a carrier of disease. This is believed to be the first time that the idea was definitely mentioned, and Metchnikoff may be held to be the originator of it.

A period of about five years then elapsed before anything more was said about the question, when in 1892 a Dr. Dewèvre published in Paris[1] an account of a supposed case of the transmission of tuberculosis, which he discussed at length, and tried to establish. His evidence was quite insufficient, and the whole case did no more than throw grave suspicions on the bedbug. Since then the case has been quoted and reviewed from time to time in medical journals and general treatises on medicine. It was founded on suspicious circumstances only.

In 1895, M. Morau,[2] a Frenchman, published an article on the contagiousness of cancer, in which he tried to establish, by means of experiments, that bedbugs carried the causative agent of that disease. The experiments were entirely negative.

Two years later, articles ascribing to the bedbug means of spreading diseases became more or less common. Dr. George H. F. Nuttall, formerly of Johns Hopkins University, Baltimore, then began his series of important experiments on the rôle of insects in the spread of diseases, which were continued over several years, and then, in the year 1900, summarized, together with a critical and historical study of the whole question. The possibility of the transmission of relapsing fever by bedbugs was considered by Dr. Tictin, with negative experiments, while a Japanese writer, M. Yamagiwa, stated definitely that out of a large number of clinical cases of bubonic plague, one case was caused by the bite of a bedbug.

In the following year, 1898, Dr. Charles F. Craig, then acting assistant surgeon, U. S. army, quoted the cases of Tictin and Morau, and called attention to the lack of knowledge of the question involved. Experiments on the transmission of anthrax by bedbugs were recorded by M. Joly, with negative results, while one of his fellow countrymen, Dr. Simond of the Pasteur Institute, stated in a lengthy article on bubonic plague, that the flea and the bedbug were the two "parasites," *a priori*, which were able to assume a rôle in the transmission of that dangerous disease. He thought it probable that the bedbug intervened in the transmission of that disease from man to man.

During 1899, MM. Calmette and Salembni[3] wrote of a case of bubonic plague in which the bedbug's bite formed a starting point of the disease. During the same year Dr. Carmichael of the U. S. Public Health and Marine-Hospital Service, said, "It is suspected that certain insects play a part in the transmission of leprosy, the common house fly, mosquito and bedbug being the principal carriers of infection." In 1899 Dr. Coplin of the Jefferson Medical College proved that pure cultures could be inoculated from infected bugs; the infections were those of typhoid fever. After discussing the parts played by household insects in spreading certain diseases, he concludes by saying, "The danger from the bedbug and roach would probably be great in diphtheria, and all would share in the possible dissemination of tuberculosis, anthrax and similar bacterial diseases." Conclusions opposite to this, however, were reached by Mühling in a paper published at Jena about the same time. He concluded that of themselves, bedbugs could not carry contagions, but that their bites would naturally form a *porte d'entrée* for pathogenic bacteria.

With the exception of minor articles, the only other important writing which has been published on bedbugs and their relations to human diseases, is that of Dr. Nuttall, above mentioned. This was first published at Berlin in 1899, and reprinted the following year in the *Johns Hopkins Hospital Reports*. It critically discussed all the experimental evidence then recorded concerning the transmission by bedbugs of anthrax, bubonic plague, mouse septicemia, chicken cholera, *Bacillus septicus*, relapsing fever, and tuberculosis. Nuttall concluded that nothing had been positively proved, and his conclusion holds up to the present.

Before closing, a pertinent quotation may be taken from an address made by Dr. George Homan to the Division of Maritime Hygiene and Quarantine at the third Pan-American Medical Congress, Havana, in February, 1901. Among other things, he says, in conclusion:

1. This article was reprinted in the Medical Record of New York, and in the year following it was reviewed in Insect Life, a periodical published by the then Division of Entomology, U. S. Department of Agriculture, and in the American Monthly Microscopical Journal of Washington.

2. Revue Scientifique, Paris, iv, series 3, pp. 42, 43.

3. Annales l'Institut Pasteur, Paris, xiii, p. 883.

One of the most cosmopolitan and formidable of human parasites remains to be mentioned—*Cimex lectularius*—and one whose potency for harm in a public health sense has hardly been adequately measured perhaps by reason of its . . . nocturnal habits, . . . but its activity in temperate climates coincides very nearly with the usual maximum prevalence of yellow fever and malarial diseases . . . Its stubborn inhabitancy of human dwellings, however, points significantly to it as at least a coadjutor in the persistence of the first-named disease, where it is endemic, and as an influential agent in the spread of other infections as certain forms of tuberculosis, syphilis, leprosy, carcinoma and peradventure, bubonic plague.

Notwithstanding the fact, therefore, that as yet nothing definite has been proved against the bedbug, it is plainly evident that the investigation of the question has just begun. Comparatively few experiments have been performed, and the most enthusiastic optimist would find it a difficult matter to conclude that no danger is to be apprehended from this source. Hence every consideration, that of personal cleanliness, that of personal health, that of self defense, uniting for the welfare of all, bids us look to this filthy creature with a cry of "Wherefor?"

NEGRI BODIES IN HYDROPHOBIA.*

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Negri,[1] an Italian investigator of the University of Pavia, in 1903 described certain bodies, which he observed in the nervous system of animals dead of hydrophobia. He detected a definite structure in them, believed them to be protozoan in character, and associated them with the etiology of the disease. Since that time many workers, especially Italians, have corroborated his findings and extended the work along various lines. Much of it has been done with a view of utilizing the presence of these bodies as a rapid and reliable means of diagnosis and it appears that in this respect marked success has been attained. Negri first reported the occurrence of these bodies in animals, finding them in nearly every case of suspected rabies, which gave a positive result by the inoculation method. In 75 animals, mostly dogs, suspected of this disease, the inoculation test was positive in 52, and 50 of these 52 animals showed the presence of the bodies. They were not found in any of the remaining cases which were negative also to the inoculation test.

These bodies, which have now come to be universally known as Negri bodies, are found in the protoplasm and occasionally in the processes of the nerve cells. They have not been seen in the nucleus, but are frequently in immediate contact with it. Their distribution in the nervous system varies. In general they are more numerous and larger in the hippocampus major than elsewhere, but are frequently found in the Purkinje cells of the cerebellum, in the pyramidal cells of the cortex and in the cells of the pons, Gasserian ganglia, spinal ganglia and spinal cord. Negri claimed that their distribution depended on the point of inoculation. In animals in which rabies are produced by inoculation in the sciatic nerve the bodies are found chiefly in the cord and spinal ganglia; in the brain in these cases they are rarely found, or if present are small. This is questioned, however, by Bertarelli, who never failed to find them in the hippocampus major in animals inoculated in the sciatic nerve.

The bodies vary a great deal in size and shape, depending on their location in the nervous system, the stage of the disease and on the animal in which they are found. Some forms are so small that they may just be seen with the highest power of the microscope. They vary from this size to bodies 25 to 30 micra in diameter. Usually they measure from 4 to 10 micra. They are, as a rule, oval or round, not infrequently irregularly oblong, and have a distinct internal structure. Negri pictured in his first paper the bodies as containing definite, ring-like structures. Frequently they are arranged around the periphery and in the center is a distinct body, thus representing a rosette-like appearance. The smaller bodies are usually homogeneous. They are all strongly eosinophilic, but by proper staining, basic staining granules are seen within the body, which are different from the ring-like structures. Further details concerning the staining of these bodies will be considered later.

The number of these bodies found in a single nerve cell varies from one to a very large number, this depending on the animal and also on other factors, such as the stage of the disease and the locality in the nervous system. In many of the cells only one body is seen, but it is very common to see two, three or four bodies in the same cell, and occasionally a very much larger number.

Negri found these bodies in dogs, cats, rabbits and in the human, and observed them in experimental rabies, street rabies and in rabies produced with the fixed virus. Since that time a considerable number of workers have reported their results and it now appears that they are found in all animals, with, perhaps, few exceptions, dead of rabies and are never found in any other condition. Without going into the details of the reports of the various investigators, it may be said that up to the present many hundreds of examinations made by numerous workers in various countries have confirmed the first observations of Negri in nearly every detail. Among these reports may be mentioned as most important those of Volpino, d'Amato, Daddie, Bertarelli, Guarnieri, Luzzani, Schiffman and Frothingham. The bodies have been found in man, in dogs, cats, rabbits, guinea-pigs, rats, horses and cattle. Negri also investigated a large number of animals which were not rabic and in no instance could these bodies be found. Others have corroborated this also. Brains from animals and from man dying from various infections, strychnin poisoning, tetanus toxins and the like have been examined carefully and in no instance have bodies corresponding to these been found.

The fact should be emphasized that occassionally in undoubted cases of rabies these bodies are not found. Negri called attention to this in his first paper and thought it was due to an anomalous distribution. In dogs and rabbits in reports thus far made such cases do not amount to more than 2 per cent. And it is probable with improved staining methods and better knowledge of their distribution this number will become much less. As to their general occurrence in animals susceptible to the disease it may be said that Bertarelli could not find them in 5 marmots which he inoculated with the virus and which died of typical symptoms of this disease. With this exception they have been found in all the varieties of animals examined.

The time at which the bodies make their appearance in the nerve cells has been determined at 1 to 3 days before the onset of the symptoms. Negri found, for instance, that in animals inoculated with a virus which caused death in from 12 to 13 days they were present

* From the Pathological Laboratory of Rush Medical College.
1. Zeit. f. Hyg. u. Inf., 1903, 43, p. 507.

on the tenth or eleventh day. They appeared following subdural inoculation first in the hippocampus major, and at this time were very small. This work has been confirmed by Bertarelli.[1] Schiffman obtained different results. He claimed that the number of passages has an effect on the structure and distribution of the bodies. By frequent passages the more complex forms and later the simpler forms disappear first from the hippocampus major and then from the cerebellum so that after numerous passages, as in the fixed virus, the bodies are not found in the cerebellum and hippocampus major at all.

NEGRI BODIES IN HUMAN RABIES.

The brains of five human cases in the Pathologic Laboratory at Rush Medical College were examined. The results are given in tabulated form (Table 1). The Negri bodies were found in all, and the Nelis-van Gehuchten reaction was also well marked in all.

TABLE 1.—Hydrophobia, Human.

Case No.	Sex.	Age.	Where Bitten.	Period of Incubation.	Duration of Symptoms.	Pasteur Treatment.	Inoculation Test with Rabbits.	Nelis-Van Gehuchten Reaction.	Negri Bodies.
1	M	38	Right forearm by cat.	75 da.	3 da.	Not given.	None made	Positive.	Right and left motor cortex positive; other parts of brain not examined.
2	M	17	Right cheek and eyelid by dog.	15 da.	2 da.	1 wk after bite 2 injec. daily for 8 days.	None made	Positive.	Present in hippocampus; in Purkinje cells few and small; not found in the cortex.
3	M	56	Left hand by dog.	21 da.	2 da.	Not given.	Positive.	Positive.	Cerebellum, left and right Gasserian ganglia and cortex positive Cord and medulla negative.
4	F	6	Right forehead by dog.	22 da.	2 da.	Treatm't begun 7 days after bite.	Positive.	Positive.	Hippocampus and cerebellum positive. Cortex and medulla negative.
5	M	43	Left hand by dog.	43 da.	2 da.	Not given.	Positive.	Positive.	Cortex positive. Cerebellum, temporal lobe, lumbar and cervical cords negative.

The brains of 12 rabbits dying as a result of subdural inoculation with suspected rabic virus were examined for these bodies, with positive results in all cases. They were found in the hippocampus major, cortex and cerebellum and were, as a rule, very numerous. In some of the rabbits they occurred in nearly every nerve cell and often several bodies occurred in the same cell. Two of the rabbits had been inoculated with cord emulsion from case No. 3; 2 from case No. 4; and 3 from case No. 5. Five were inoculated with virus from a rabic dog. In the dog's brain the bodies could not be found. No Zenker-fixed preparations were obtained here, since the brain had been placed at once in formalin, and this may be responsible for not finding them in this instance. However, it should be said that in some of the cases they were found in tissues which had been fixed in formalin, but in these preparations they were much less numerous and much more difficult to find.

The bodies in the human cases were less numerous than in the rabbits and slightly smaller. In the rabbits the round or oval forms with the distinct ring-like bodies were by far the most common. The small homogeneous forms were not uncommon and the distinctly rosette forms were only occasionally found. Some of the bodies appear to have a double contour. The bodies, especially in the rabbits, are often in direct contact with the nuclei and usually at its inner or outer pole. Occasionally they are seen far out in the process of the cell, and in this position are always more elongated than when in the body of the cell as though conforming to the shape of the narrow dendritic structure.

THE DIAGNOSIS OF RABIES.

As has been stated, much of the work thus far on these bodies has been done for the purpose of establishing their value as a reliable and rapid means of diagnosis in animals suspected of being rabic. Since this depends largely on staining methods, a brief summary of the most important will here be given.

For fixing the tissues Zenker's fluid is the most satisfactory; sublimate has also been highly recommended. Formalin and alcohol are not suitable. For detecting the bodies no special staining is necessary. Any of the ordinary stains, such as hematoxylin and eosin, bring them out distinctly. For differentiating a number of methods have been employed. Negri recommended above all others the cosin-methyl-blue of Mann. This has been used by many workers and proved very satisfactory. The bodies stain a pink or purple, and in some are dots which take a blue stain. The nuclei of the cells stain a deep blue. Frothingham[2] recommends Unna's methylene-blue and 5 per cent. aqueous eosin, equal parts. Romanowski's stain has been recommended by Bertarelli.[3] Volpino, for a rapid method, recommends fixing in 10 per cent. osmic acid for 4 or 5 hours, treating with absolute alcohol and cutting free hand sections which are mounted in glycerin. The bodies appear black. Negri noted that the bodies could be seen after teasing the nerve tissue in dilute acetic acid, and recommended this for rapid work. This has not proved satisfactory. Frothingham has strongly recommended smear or impression preparations of fresh brain tissues fixed in Zenker's fluid or dried in the air and stained with Unna's methylene-blue followed by eosin. This method has the advantage of not requiring embedding and sectioning and will probably largely replace the other methods for rapid diagnostic work. If in a suspected case they are not found in smear preparations, sections of various parts of the brain should then be made.

Compared with the inoculation test, the examination for Negri bodies possesses distinct advantages, the most important being the saving of time, which is so important in giving the Pasteur treatment. So far as reliability is concerned, there is little to choose from, for it is known that occasionally an inoculated animal does not react. Again, these bodies have the property of resisting putrefaction for several days. This is important, for frequently suspected dogs are shot through the head and are not sent to a laboratory for examination for several days. In such contaminated condition the brain is quite unfit for subdural inoculation into a rabbit, whereas the Negri bodies remain unaffected by the putrefaction.

The proliferation of the endothelial cells in the capsule of the ganglion cells and other places described by van Gehuchten and Nelis is a lesion which is usually, if not always, present in rabies and as a confirmatory test should always be noted. It can not be said, however, to be absolutely diagnostic, for a similar change has been found in the central nervous system as a result of other infectious diseases. No special staining methods are required for noting this reaction, and in examining for Negri bodies in suspected animals its occurrence may be noted.

2. Jour. Med. Research, 1906, xiv, p. 475.
3. Centralb. f. Bakt., 1905, xxxix, I Abt., Orig. p. 407.

To sum up the proper steps as we know them at present, in the diagnosis of rabies in animals, the following points may be noted: Any animal suspected of being rabic should, if possible, be captured alive, placed in a cage where it can do no harm and watched. If it has rabies it will die in a few days. No rabic animal ever recovers. To exclude other causes of death, the brain should be removed and an examination of its various parts made according to the methods above described for Negri bodies and incidentally for the Nelis-van Gehuchten reaction. If the bodies are found, the diagnosis may be considered absolute. This will take only a few hours. If the bodies are not found, then the inoculation test on animals should be made, which requires, as a rule, from 2 to 3 weeks. The demonstration of the bodies of hydrophobia, therefore, is of great importance to the physician in cases of persons bitten by suspected animals, for by sending the brain of the animal to a well-established laboratory an almost absolute diagnosis may be had in a few hours, and, if positive, the Pasteur treatment advised at once.

NATURE OF THE NEGRI BODIES.

Concerning the nature of these bodies, little of a definite character may be said. Negri, in his first paper, stated that he believed them to be protozoa and probably the cause of the disease. This, of course, he could not demonstrate. Volpino[4] has attempted to arrange in a cycle the various forms which he observed in the hippocampus major in dogs inoculated with street virus and killed at the first appearance of rabic symptoms. In this cycle he has 8 different steps, but this does not include all the forms he observed. It has been shown by Remlinger, Barratt, Bertarelli and others that the virus passes through the Berkefeld filter No. 5. This does not exclude the Negri bodies from being etiologically associated with the disease, for forms so small that they can hardly be seen with the highest magnification occur, and there is no reason why forms still smaller may not also exist. Volpino, in his cycle, considers one stage as that of the filterable virus.

That Negri bodies as we see them can not be considered identical with the virus seems quite clearly demonstrated. It has been shown that the hippocampus major where they are most numerous is no more virulent than other parts of the brain in which they may not be found at all. The medulla of rabic animals is considered to be the most virulent part of the nervous system, yet the bodies are often absent from this region or occur in small numbers. Bertarelli[5] also showed that the hippocampus became virulent 2 to 3 days before the appearance of Negri bodies in that region.

The possibility of these bodies being degeneration products has been carefully considered. In this respect they must pass through the same critical ordeal to which the analogous bodies of cancer, smallpox, scarlet fever and the like have been subjected. All that can be said at present is that they are different from any degeneration product or any morphologic entity, normal or pathologic, thus far known. They are specific, therefore, for this disease and, whether degeneration product or protozoa, are important as diagnostic structures.

Uremia.—Dr. S. West says that we seem driven to suppose that the symptoms of uremia are due to some substance suddenly developed in the body in some mysterious way, and it is on chemico-physiologic lines that we must seek an explanation. *Clinical Journal*, May 30, 1906.

4. Centralb. f. Bakt., Referate 1905, xxxvii, p. 459.
5. Centralb. f. Bakt., I Abt. Orig. vol. 39, p. 399.

THE STAINING AND EXAMINATION OF THE BACTERIA OF THE EYE BY SIMPLE PRACTICAL METHODS.*

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The staining of the bacteria of the eye with a view to the practical benefits to be derived therefrom may be conveniently divided as follows: Film preparations, including both smears from fresh conjunctival discharge and culture preparations; scrapings from corneal or conjunctival ulcers; tissue preparations.

Film preparations from the fresh conjunctival discharge, which represent the greater proportion of our work at present in the Laboratory of the Manhattan Eye, Ear, and Throat Hospital, are of value not only in arriving at a correct diagnosis, but also in the study of the progress of the disease. Every case which is admitted to the contagious wards has several films made, followed by cultures if this latter seems necessary; and thereafter, as long as the patient remains in the hospital, film preparations are made every two or three days. In preparing the films some care is necessary in order to secure the best results. After thoroughly cleansing the slides in alcohol, a small amount of pus from the conjunctival cul-de-sac is taken up on a platinum wire loop and spread as thinly as possible on the slides. In doing this, the drop should be led gently over the slide rather than rubbed on, for if too much violence is used the relations of the cells and bacteria may be disturbed. The practice of taking the pus on a cotton swab and rubbing it over the slide is a very bad one and likely—in the case of gonococcus at least—to lead to erroneous results. The slides are then dried and are ready for staining.

For general work, Loeffler's methylene blue continues to be our most useful stain. It is made by adding 30 parts of concentrated alcohol solution of methylene blue to 100 parts of 1 to 10,000 aqueous solution of caustic potash. This solution is poured over the slide and rocked back and forth until the smear is colored a fairly deep blue, generally in from a few seconds to a minute. The slide is then washed freely and dried, when it is ready for examination with the oil immersion lens. No cover-glass is necessary; the drop of oil is placed directly on the slide. The pus and epithelial nuclei are stained deep blue, the cytoplasm and mucus faintly, while the majority of the bacteria are stained to about the same intensity as the pus nuclei. Carbol fuchsin in 5 per cent. solution may be used in the same way, but it offers no especial advantages in the majority of cases over the methylene blue, so in practice we do not often use it.

Counter-staining is of distinct advantage in showing certain details not ordinarily visible; the cytoplasm shows more plainly, the contrast is greater, and there is better cell differentiation, showing the relation of cells to bacteria. Our pathologist, Dr. E. G. Zabriskie, uses Wright's modification of Jenner's blood stain (eosinate of methylene blue), or Goldhorn's polychrome methylene blue. In preparing the eosinate of methylene blue the first step is to precipitate the red in methylene blue by dissolving 1 gm. of methylene blue in a 0.5 per cent. solution of sodium bicarbonate. This mixture is steamed for one hour in an Arnold steam sterilizer, then cooled rapidly, and poured into a large porcelain dish. Under constant stirring, a 1 to 1000 aqueous solution of yellow eosin is then added until a metallic scum appears.

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

About 400 or 500 c.c. of the eosin solution will be found necessary for 100 c.c. of the original methylene blue solution. The precipitate is then collected by filtration, carefully dried by gentle heat, and a saturated solution is made of the precipitate in pure methyl alcohol. About 0.3 per cent. is necessary for saturation. The mixture should then be carefully filtered, and 25 per cent. of methyl alcohol added.

In using the stain no preparatory fixation is required. The stain is applied for one minute, during which fixation takes place through the methyl alcohol. Distilled water should then be added, drop by drop, until a metallic scum forms on top of the liquid and the edges are a purplish red color. The actual staining now takes place, and this is kept up for from 3 to 5 minutes. The slide is then washed and dried and the smear examined.

The washing is a delicate process; on it depends in great part the success of the stain. It must be done very slowly, carefully and thoroughly. The nuclei will be found blue to purple green, the bacteria purplish, and the neutrophilic granules purplish pink. Goldhorn's polychrome methylene blue is used exactly as Loeffler's methylene blue. The stain may be bought already mixed, and the smear is simply stained for one minute or less, washed and dried.

Decolorization is of great value, from a diagnostic standpoint, owing to the fact that different bacteria give up the stain with very different degrees of readiness. It is especially valuable in the case of the gonococcus, and is best accomplished by the method of Gram, which is as follows:

Fix with gentle heat.
Stain with anilin gentian violet three minutes.
Wash with salt solution.
Add iodin solution for one minute.
Wash.
Decolorize with absolute alcohol until the smear looks steel-gray.

The most important germ with which we have to deal from the practical clinical standpoint—both from the severity of its effects and its relative frequency—is the gonococcus. In typical cases, soon after the onset of the disease, we find under the microscope large clusters of perfectly characteristic biscuit-shaped diplococci lying chiefly within the pus and epithelial cells and showing a pale capsule surrounding each pair of individuals. Tetrads are uncommon in the conjunctiva. They stain well with Loeffler's methylene blue or either of the counter-stains above mentioned.

In the great majority of cases, the clusters are perfectly characteristic for the first 5 to 7 days after the onset of the disease, and if the clinical appearances of gonorrheal conjunctivitis are well marked we make no further examination. If, however, the clinical appearances are not characteristic and the smears show many varying forms lying outside of the cells, we next proceed to decolorize by Gram's method. If the bacteria decolorize, we have either the gonococcus or the diplococcus of meningitis, or perhaps the *Micrococcus catarrhalis*. Modern observers almost all agree that staphylococci, though they may assume the form of diplococci, never have the concavities facing each other as in the case of the gonococcus, and the capsule—except in the pneumococcus—is also lacking. It is easy, therefore, to say that a case which has the typical appearance and in which the clinical symptoms are characteristic is gonorrheal; while it is extremely difficult to say that any given case—especially late in the disease—is not gonorrheal. The meningococcus may assume the typical form of the gonococcus, but is rather rare in the conjunctiva and causes a much less severe inflammation. Many diplococci will be found lying outside of the cells and numerous varying forms will be present. If doubt still remains, cultures alone will decide the diagnosis.

As the attack of gonorrheal conjunctivitis yields to treatment, the groups of gonococci grow smaller and show many varying forms (involution forms) of less characteristic shape, but as long as the least amount of discharge remains the germs will be found. Some writers assert that the gonococci may be found even after the discharge subsides. On this point I can not speak from actual experience, but when the pus cells disappear and the discharge assumes the catarrhal form, with mucus predominating, gonococci can not usually be demonstrated, and it is our custom to discharge the patient from the hospital wards.

The diplococcus of meningitis deserves mention, not from the frequency of its occurrence—for all agree that it is rare in the conjunctiva—but on account of its similarity to the gonococcus. It occurs within the polynuclear leucocytes, but, according to Park,[1] "it never appears within the nucleus and rarely within other cells." It is decolorized by Gram, as is the gonococcus, but the cultural differences—into which I will not enter here—are decisive. During about eight years we have seen at the Manhattan Eye, Ear and Throat Hospital only three or four well-established cases to about 400 cases of gonorrheal ophthalmia. Of course, it should be said that the severe cases do not come into the wards, and this would, no doubt, somewhat reduce the number of the meningococcus cases. Parsons[2] says: "The rarity of this organism scarcely vitiates the ordinary rules of procedure, but in cases of doubt cultivation experiments must be resorted to." The *Micrococcus catarrhalis* (R. Pfeiffer) is believed by Park to have been at times confused with the meningococcus, and it is possible, of course, that our cases were caused by this organism. The clinical symptoms were those of a very insignificant conjunctival affection, and a few days' treatment sufficed to clear up the discharge; so that, lacking the peculiar cell penetration that is so characteristic of the gonococcus, it seems fairly certain that they were either meningococci or one of its allied forms, and not the gonococci, and, as this was for us the point of practical importance, I regret to say that no careful culture studies were made. Of course, the clinical condition and history were carefully considered, as they should always be.

Other diplococci occasionally resemble gonococci, but most of them are positive to Gram. In this connection it should be remembered that, on account of the rapid onset and alarming appearance of gonorrheal ophthalmia, such cases usually come under our care early, at a time when the gonococcus is well developed and is most characteristic in smears. Later, when involution forms begin to appear, the diagnosis is more difficult and smears are of less value. Another fact which makes early smear examinations important is that the other pus cocci develop more slowly than the gonococci, and early smears show very few other organisms.

The detection of the Koch-Weeks bacillus in smears is fairly easy. It belongs to the group of influenza bacilli and seems to be the commonest cause of acute contagious conjunctivitis. The clinical characteristics of the disease caused by it vary considerably. It is worse in some epidemics than in others, so that we have

1. Park: Pathogenic Micro-organisms, p. 361.
2. "The Pathology of the Eye," vol. I, p. 44.

little to help us in the clinical symptoms. They appear as short fine rods (0.8 by 10 micromillimeters) lying frequently between the pus cells and also within the cytoplasm in great numbers. They frequently lie end to end in the shape of the letter V. They take the stain with difficulty, and in methylene blue preparations stain usually to about the intensity of the cytoplasm, so that a first glance through the microscope gives only a faint idea of the number usually present. As more careful examination is made the bacilli may be seen by hundreds. They are best stained with Ziehl's solution of carbol fuchsin, 1 part to water 9 parts, or with

According to Park, it is to be differentiated from: 1, the influenza bacillus of Pfeiffer; 2, the so-called influenza bacillus of conjunctivitis, of Müller; 3, the pseudo influenza bacillus of Zur Nedden. All these grow only on a hemoglobin medium, which is not required by the Koch-Weeks bacillus. They are nearly allied forms and can not be morphologically differentiated from the Koch-Weeks, but from a practical standpoint the film diagnosis is of considerable value, as the other forms are probably much rarer. In cultures of the Koch-Weeks, club-shaped involution forms commonly appear. It is decolorized by Gram.

The Morax-Axenfeld diplobacillus has quite a characteristic appearance in smears. It causes a low grade of chronic blepharo-conjunctivitis, and occurs plentifully in the conjunctival discharge in such cases. The bacilli are large (2 micromillimeters by 1), though this varies, and they are frequently found in chains. They stain well with ordinary anilin stains and are decolorized by Gram. According to Parsons, the *Bacillus liquefaciens* of Petit is a diplobacillus closely allied to the Morax-Axenfeld. It occurs in corneal ulcerations, especially of the corneal margin, and, as a rule, is smaller than the Morax-Axenfeld. Cultural differences are marked and will establish the diagnosis.

The Klebs-Loeffler bacillus of diphtheria, which occurs very rarely with us in the conjunctiva, is a short thick bacillus which varies considerably in size and virulence, facts which Parsons believes account for many of the so-called pseudo-diphtheria bacilli. There are no differential stains of reliability, and cultures, which are best made in Loeffler's blood serum, are invariably necessary. The cultural forms vary considerably and show a marked beading or polar staining.

The xerosis bacillus of Colomiatti closely resembles the bacillus of diphtheria, both morphologically and culturally. The whole question of differential diagnosis is an involved one. Both bacilli stain readily with the ordinary anilin dyes and are easily cultivated, and, aside from the chemical differences—which have recently been studied a good deal and seem to promise well—the subject seems to resolve itself into the degree of virulence of the individual growth. Within the past eight years we have had but four cases of genuine conjunctival diphtheria in our wards, and in these the severity of the clinical symptoms left no doubt that we were dealing with true diphtheria.

Staphylococci, streptococci and their allied forms deserve only a passing mention in the present connection. They all stain readily with anilin dyes, have no differential stains of value, and must be studied by cultures and inoculations to arrive at a correct bacterial diagnosis.

The pneumococcus of Fränkel and Weichselbaum is of importance, both as regards its rôle in conjunctivitis and in ulcus serpens of the cornea. It frequently has a characteristic shape in smears, and a diagnosis can be made with a fair degree of certainty in many instances, but in other cases the forms vary so greatly that cultures must be made. When typical, it has the shape of two cartridges placed end to end and surrounded by a pale capsule. In many instances this capsule is absent and the lanceolate shape is not marked, and it may even form short chains. As a modern writer puts it: "Its chief characteristic is variability." It is best stained with weak carbol fuchsin, as in the case of the Koch-Weeks. The slide is gently heated during the staining, in which case the capsule, if present, will show clearly.

Scrapings from a conjunctival or a corneal ulcer may frequently give valuable information. If the case is one of suspected tuberculosis of the conjunctiva, it is best, on account of the scanty distribution of the bacilli, to excise a piece of tissue from the margin of the ulcer carefully and to "shred" it in a small amount of normal salt solution, and then to spread the whole on slides which are stained for tubercle bacilli with carbol fuchsin and methylene blue, a method that is so well known as to need no description here. Corneal scrapings should be treated in the same manner and then stained with methylene blue. It is not, however, always possible to find the distinctive germ in such specimens, as every one knows who is familiar with such examinations. Even in positive cases we usually find but a few bacteria. Tissue preparations are also unsatisfactory at times and frequently in undoubted cases of infection bacteria can not be demonstrated in the sections. This is partly due to the fact that it is so difficult to get the sections thin enough for accurate bacterial study, and partly due to the early destruction of the bacteria by the phagocytes. We use in preference the toluidin blue stain, which is not difficult and at times gives good results. The various steps of this method are as follows:

Dissolve 1 per cent. of toluidin blue in 1 or 2 per cent. carbolic water.

Stain from fifteen to thirty minutes.

Decolorize in 95 per cent. alcohol, to which, if the color is given off slowly, add a few drops of glacial acetic acid.

If the acid is added it is again washed with 95 per cent. alcohol.

Clear rapidly in carbol xylol.

Immerse for a few seconds in oil of origanum.

Mount.

The proper degree of decolorization is reached when the sections show only a faint trace of the original blue color—in other words, show only a sharply defined stain of the nuclei, basophilic granules, and bacteria. If counter-staining is desired, the sections, after staining in toluidin blue, are immersed in water and then in a 0.5 per cent. solution of aqueous yellow eosin, where they are allowed to remain 10 minutes or longer. They are then transferred to 95 per cent. alcohol, where the dehydration and decolorization take place at the same time. They are then cleared and mounted. By this modification the fibrous tissues are stained pink.

Unna's method may also be used by simply substituting Unna's alkalin methyl blue for the toluidin blue. The other steps in the staining are the same.

DISCUSSION.

DR. BROWN PUSEY, Chicago, said that he thought the paper would be greatly improved if the title read, "The Staining and Examination of the Bacteria of the Eye by Accurate Methods." This point seemed the more important because recently he had been asked often for advice as to how one can quickly and easily get a working knowledge of bacteriology for use in this specialty and how quickly to make examinations of the secretion. His answer to the first question was that the matter is

so important that it deserves not quick and simple consideration, but thorough work, and to the latter that such an examination should not be a matter of quickness, but of accuracy, that it is so important in every case that abundance of time should be given to make a careful examination. In answering this question the matter of depending on the clinical conditions for determining the character of the infectious agent had come up several times, and to answer this question he had but to cite two recent cases. One in the clinical diagnosis was made by capable men of probable gonorrheal conjunctivitis; bacteriologic examination showed the diplobacillus of Morax-Axenfeld to be the pathogenic agent. Another was in an elderly woman who was caring for a case of gonorrheal conjunctivitis. On one of his visits he found this woman's eyes slightly red, and bacteriologic examination showed the presence of gonococci; the conjunctivitis resulting from this infection was so trivial, however, that the patient did not realize that anything was wrong, and she recovered without treatment. These two cases show how reckless it would be to venture an opinion of the nature of the infectious agent from clinical conditions.

Dr. Pusey emphasized the importance of cultures in bacteriologic diagnosis even more than did Dr. Thomson. He said that he had been able to make a diagnosis from cultures when smears failed, or rather when he failed to find organisms in smears. He had heard the complaint that it is difficult to keep on hand a supply of culture media. The media that one really needs is not hard to get if one makes a little effort.

As regards the frequency of occurrence of the various pathogenic organisms of the conjunctiva, his experience in Chicago differs from that of Dr. Thomson. Last year he had 14 cases of pneumococcus conjunctivitis, 13 cases of diplobacillus conjunctivitis, 4 cases of conjunctivitis due to the influenza bacillus, 3 due to the gonococcus and a few cases due to the staphylococcus. He has not yet found the Koch-Weeks bacillus in Chicago.

DR. ARNOLD KNAPP, New York, believed that the bacillus of influenza would be found more frequently in these cases if proper culture media were used. The relative importance of the smear and cultures for determining the organisms he considered a difficult question. No less an authority than Morax states that a smear is all that is necessary, that a culture of the organism in the conjunctiva is of little value and apt to be misleading. While that may be true in some cases, Dr. Knapp said it certainly is not of the diphtheria bacillus. It can not be told from the non-virulent forms simply by its morphology, and the practiced bacteriologist will not make a diagnosis simply by the character of the culture. The Board of Health of New York will not make a diagnosis of diphtheria from cultures obtained elsewhere than from the throat, without knowing the clinical manifestations of the case. By the fermentation tests in serum water media (Journal of Medical Research, vol. xii, No. 4) this differentiation can be made in a much simpler manner than by animal inoculations.

DR. GEORGE S. DIXON, New York, agreed entirely with Dr. Knapp in regard to the diphtheria bacillus. He did not think a diagnosis should ever be made of diphtheria without cultivation. Often even that is not sufficient and physiologic experiments are necessary. Within the last two weeks there was in the New York Eye and Ear Infirmary a case undoubtedly due to the Klebs-Loeffler bacillus. The smear showed absolutely nothing, but on cultivation the Klebs-Loeffler bacillus was found. There was no membrane. It was decided by Dr. Price, in whose service the case occurred, that it might be well to use antitoxin, and application was made to the Board of Health for it, but they did not get a satisfactory cultivation and refused the antitoxin. Except for the Klebs-Loeffler bacillus it is seldom necessary to make cultivation. It is a very easy matter, in his experience, to make a diagnosis of gonococcus; if there is any doubt, then, of course, a cultivation can be made. The pseudodiphtheria bacillus has caused him considerable trouble, and in nearly every case examined he has found at least a few so-called pseudo-bacilli. In two instances in which there was apparently nothing else present he lost the eyes. It seemed in these cases there must have been something else present. He has always been in the habit of advising against operation (in the presence of these pseudo-bacilli) if there is much secretion present, waiting until the conjunctiva completely clears up.

DR. JOHN E. WEEKS, New York, has seen a case of gonorrheal ophthalmia presented as a case of diphtheria of the conjunctiva by one of the best clinicians, and when a properly stained preparation was examined the diagnosis was cleared up at once. He has seen cases of gonorrheal conjunctivitis that were not more severe than the ordinary case of mucopurulent conjunctivitis. Microscopic examination, however, revealed the true nature of the infection. The clinical examination alone is not sufficient. In regard to the diphtheria bacillus, if the clinical aspect of the case is taken in connection with the findings of the microscope he considers that sufficient to enable one to make the diagnosis.

DR. E. L. MEIERHOF, New York, said that unless one is constantly cultivating this work his bacteriologic diagnosis is very uncertain. He thinks this work, after all, should be left to men who are constantly associated with it. It is surprising what different opinions come from men constantly doing this work. This question between the Klebs-Loeffler or the pseudo-diphtheria bacillus is one in point. He recalled the case of a physician he treated, who had an appearance like that of trachoma. Diagnosis was made by two different men; one obtained the Klebs-Loeffler bacillus and the other the pseudo-bacillus. The patient got well ultimately, after a long time. Unless one is constantly doing bacteriologic work his examinations in many cases will be unsatisfactory.

DR. BROWN PUSEY, Chicago, protested against the idea of turning the examinations over to some one else. A large per cent. (probably 50 per cent.) of the inflammatory cases that come to the ophthalmologist are of infection of the conjunctiva and cornea, and the diagnosis, treatment and prognosis of these cases depends entirely on the bacteriologic examination; the clinical diagnosis is utterly unreliable. Such being the case, it behooves the man treating these cases to find out for himself the nature of the infectious agent.

DR. EDGAR S. THOMSON, New York, said that there was just one thing more that he would call attention to with regard to examinations for diagnostic purposes, and that was whether we make smears or culture that is not the whole question as to causal relations of the disease. The questions of relative virulence of the germ and immunity of the patient must be considered as well as the clinical picture. In a conjunctivitis in which a certain germ of known virulence is found to predominate it may be assumed with reasonable certainty that it is the cause of the disease, but in a mixed infection it is a difficult matter, even with cultures and smears, to tell which is the causative factor. The diphtheria bacilli and the pneumococci exist in the conjunctiva in a non-virulent state, and we must, therefore, consider the whole question in order to arrive at an intelligent opinion. For that reason he doubted many of the mild cases of gonorrheal conjunctivitis. He believed that when the gonococci are the causative factor, and of any virulence, they penetrate and there is a severe reaction.

HISTORY OF THE MASTOID OPERATION.

ITS SURGICAL ANATOMY, ETC.

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CHICAGO.

So much has been written concerning the mastoid and its associated organs, and the ground has been surveyed by so many leaders in otology, that it seems almost presumptuous to say anything further on the subject, unless distinctly new light can be cast on places that now seem more or less enveloped in darkness.

The last word, however, has not yet been uttered on mastoid and its allied surgery, and until it has, individual experience and observation may, nay must, assist us in the accumulation of future information and in the systematizing and clarifying of present knowledge.

Mastoid surgery, with such complicating features as

cerebral and cerebellar abscesses, sinus and jugular thromboses, extensive tympanic necroses, easily takes its place with the most important surgery of the body, and only those who appreciate its significance and are ready to prepare themselves anatomically for the work should participate in the undertaking.

We have no longer a license to consider operations on the mastoid bone as a mere opening of a pus cavity, although not long since this was the extent of warrantable operative interference. In those days the surgeon was considered bold who ventured to perforate the mastoid cortex with a simple drill, for but a short span further back the Wilde's incision was deemed the limit of mastoid surgery.

HISTORY OF MASTOID SURGERY.

The date of the first crude operation for opening the mastoid process is clouded in uncertainty, some authors attributing it to Riolan, in the middle of the seventeenth century; others to Berger, of Copenhagen, who, in 1784, opened his own bone with a gimlet and afterward died; while others credit Petit with the first operation, in 1750; Morand, in 1751, and Jasser, in 1776, were certainly pioneers in this work. For our primary knowledge of its great importance credit must be given principally to von Troltsch, in 1861, and Schwartze, in 1873.

The first step in what is now called the "radical" operation for the purpose of surgically cleansing the middle ear and its adnexæ by removing the posterior superior wall of the meatus was taken by Küster, whose ideas were rapidly followed and elaborated by such men as von Bergmann, Stacke, Zaufal, Schwartze and others. Zaufal, in 1880, first proposed the surgical removal of sigmoid sinus thrombosis and operated on his first case in 1884 with a fatal result. This achievement was followed by Horsley, of London, who, in 1888, first tied the jugular vein for the prevention of general infection as the result of aural suppuration. His patient died; but Lane, Hoffman and Ballance soon followed with successful operations. It must always be remembered, however, that this operation does not entirely do away with the danger of general infection, as the poisonous microorganisms may pass into the circular and cavernous sinuses and from there to the opposite side or down the condyloid or vertebral veins to the posterior plexus and thence to the subclavian veins, etc.

It is interesting to scan the literature of fifteen and twenty years back and observe the men who were then and are now, if living, our leaders and teachers, standing dumb, helpless, hopeless, before problems that are now as clear as clearest crystal. In those days a mastoid disease was truly a *terra incognita*, filled with mystery and almost regarded as a special dispensation of Providence, against whom it were indeed hopeless to battle. The records show that these cases were treated by eardrops, irrigations, poultices, blisters, cathartics, quinin, stimulants and, as a last resort, the Wilde's incision. Most of them died but here and there a spontaneous opening through the mastoid cortex, possibly enlarged by probe or drill during the performance of the Wilde's incision, followed by the cure of the patient, formed the beacon light of reason and hope that blazed the way and beckoned on to better days. Some men, by studying the anatomy of the mastoid bone and seeing no unsurmountable obstacles to its opening, and observing that some cases recovered where spontaneous openings occurred, naturally and logically reasoned that there could be no valid objection to opening the bone by proper surgical procedure. Thus was reached the first real milestone of progress in mastoid surgery, and from this beginning advances came quickly and surely, until the heights were reached on which we pause and gaze back wonderingly.

Those bold pioneers first made a Wilde's incision and then carefully examined the cortex for softened bone or fistulous perforations, to indicate the avenue of attack, which, once found, was enlarged by drill and burr until the opening was deemed sufficient for care and drainage. But if a careful survey of the osseous area failed to reveal an advantageous spot for interference, and the patient's condition evidently demanded the liberation of pathogenic products, the bone was drilled open over the antrum and its abnormal contents were given an opportunity of escape. This was a great step in advance of previous methods; many patients recovered and the operation became popular, though still far from being distinctly successful. Deaths still occurred, and postmortem examinations revealed principally perforations through the inner plate of the bone, extending into the sigmoid sinus and brain. Instances were chronicled where, after extensive and softening necrosis of the mastoid cortex had been curetted away during operative procedures, similar necroses were observed in various portions of the inner temporal plate which, after removal, gave exit to pathogenic products, whose liberation resulted in a cure.

It, therefore, became evident that instead of delaying for tardy Nature to accomplish an ofttimes impossible task, this work should be undertaken by the operator, and another milestone in the progress of mastoid surgery was passed. The drill-hole opening was now discarded as being unsafe and unscientific; many instances were observed of puncture of the sinus, facial nerve, semicircular canal, brain, etc., by using an instrument whose point was hidden from view, and besides this the opening was far too meager to permit the thorough work of investigation and relief which was now contemplated. The Wilde's incision as a therapeutic measure was also practically relegated to oblivion as being almost useless and, from its antiphlogistic effect, tending to obscure the actual condition of the patient.

The modern mastoid operation now became the vogue; the tissue incision was greatly extended to facilitate extensive explorations and surgical procedures; the chisel supplanted the drill; the mastoid cavity was fully exposed for inspection and operation; pus, necrosis and granulations were searched for and removed wherever found, whether in the bone, brain, sinus or jugular vein, and the operation finally became fully established as one of the great modern surgical procedures.

But otologic surgery has not stayed its progress even here, and it having been observed that almost all cases of brain abscess were sequential to purulent otorrhea, and that mastoid operations were frequently followed by the cure of the latter condition, the "radical" mastoid operation, as it is known, was conceived and executed for the relief of chronic purulent otorrhea, and this menace to human life has been thereby shorn of much of its terror.

The term "radical" operation is a composite expression, conveying to the mind a variety of surgical procedures, recommended by several surgeons, but always involving the dominating idea of the absolute extermination of all pathologic elements from the diseased area and the uniting of the meatus, tympanum, antrum and cells into one large, healthy cavity, lined by new and old skin, whose healing covers the operated territory and produces an effectual barrier to further pathogenic invasion. In order that the various surgical procedures grouped under the term "mastoid" may be well understood, a

practical study of the surgical anatomy of the temporal bone is essential, and it will be the object of this communication to endeavor to consider this subject in such a manner as will relieve it of all unnecessary technicality and uncertainty, and with this hope in view we will first proceed to examine the essential surgical features of the external surface of the mastoid process.

THE EXTERNAL ASPECT OF THE MASTOID PROCESS.

It is neither essential nor desirable to attempt a general and minute description of the entire adult temporal bone, such details being accessible in any standard anatomic textbook; it will be simply undertaken in this connection plainly and practically to refresh the mind of the surgeon with those details likely to pass under his observation during the performance of mastoid operations.

The external aspect of the mastoid process is by no means uniform, but the general contour usually resembles the other dimensions of the cranium; if the latter is large and ample, the mastoid is broad and roomy, but if the skull is small and contracted the mastoid corresponds in appearance. These points are interesting to the surgeon, as they frequently indicate the situation of the sigmoid sinus, for in large mastoids this venous channel is apt to be found further back from the external meatus than in those of smaller dimensions, thus affording greater space for operative manipulations than in those of the latter variety. The surface of the bone also varies in appearance, both in health and disease, sometimes being smooth and again more or less roughened. These differences may be indicative of the pathologic condition in the interior, as a roughened, inflamed and porous cortex is apt to accompany acute inflammatory mastoiditis, while a smooth, hardened exterior often follows a chronic otorrhea with general sclerosis of the mastoid structure. The density of the mastoid cortex varies under thoroughly physiologic conditions, possessing a thickness in the adult of from 1 to 6 mm. A thick cortex should, therefore, not necessarily be understood as indicating pathologic sclerosis with few or no mastoid cells. In acute otorrhea with antrum and mastoid involvement the as yet unruptured cortex just over the antrum, or over any other depot of pus, is apt to be thinned and dotted with inflamed bony porosites (Fig. 1.6), indicating the principal purulent focus, and thereby providing a suitable area for operative initiative. Toward the mastoid apex its roughened surface serves as areas for the insertion of the sternomastoid, trachelomastoid and splenius capitus muscles, a large portion of which are usually detached by curved scissors and curette during mastoid operations to facilitate the exposure of the entire bone.

A landmark not always described in anatomic literature, and somewhat variable in its appearance, sometimes being prominent and again almost absent, is a sharp bony projection at the upper outer posterior orifice of the external auditory meatus denominated the spine of the meatus, or Henle's spine (Fig.1.5). It is almost always present in people of ten years of age, and is an important guide to the mastoid antrum, as chiseling should commence just back of the spine, below the posterior extension of the zygomatic process and a little below the superior wall of the meatus and should proceed inward, forward and on a line with the course of the external auditory meatus (Fig.1.4), keeping as close as possible to the latter, and below the zygomatic extension until the antrum is reached. The operative territory thus simply described seems so far as possible to be well within the limits of safety, as, while the floor of the cerebral fossa may be higher than the superior meatal wall, it is practically never lower; the danger, therefore, of accidentally wounding the dura and brain is infinitesimal, if strict adherence to the prescribed area is maintained. It should also be remembered that the superior border of the prolongation of the zygomatic process or supramastoid ridge, as it is called, corresponds to the floor of the middle fossa of the brain. It is sometimes situated exactly on a level with the most dependent portion of the temporal lobe, but is usually located just a little above the latter, thus emphasizing the caution to restrict operative procedures to the territory below the supramastoid ridge, if a position of safety is to be maintained. The possibility of injuring the sigmoid sinus (Fig.1.3), especially in case of its malposition, is also reduced to a minimum if the foregoing directions are followed, for it must be remembered that, while the knee of the sinus usually lies a little less than one inch back of the posterior meatal wall, it frequently rests much further forward, even in extreme cases being found so close to the meatus as to nullify all orthodox rules of operation.

Much needless description, with complicated diagrammatic and mathematical drawings, may be found in mastoid literature, guiding the operator toward safety and surety in searching for the antrum. It is, however, believed that adherence to the simple rules just enunciated will achieve the desired result, and that they may be safely relied on by operators of ordinary skill and caution. It should be remembered that, although the mastoid process is frequently thought to comprise all that projection of bone from the inferior border of the zygomatic extension to the mastoid tip, in reality the superior limit of the mastoid process terminates at the mastosquamosal suture (Fig. 1.2), and that the portion of bone through which entrance is gained to the antrum is contained within the boundaries of the descending plate of the squamous portion of the temporal bone, the antrum itself being situated in the petrous and not the mastoid portion of the temporal bone.

Directly back of the external auditory meatus, at the extreme limit of the mastoid bone, in or near the mastooccipital suture, is the mastoid foramen (Fig. 1.1), transmitting an emissary vein from the lateral sinus to the cutaneous occipital vein and also giving passage to the mastoid branch of the occipital artery on its way to the cranial cavity. Phlebitis and thrombosis of the lateral sinus are frequently prominently evidenced by soreness and swelling of this region, a point which should not be overlooked by the careful diagnostician.

On the under surface of the mastoid tip may be seen two grooves, separated by a thin crest of bone; the external groove is deep, is called the digastric groove (Fig. 2.6), and gives origin to the posterior belly of the digastric muscle; the inner groove lodges the occipital artery (Fig. 2.7).

The digastric groove is especially interesting to surgeons, for, owing to the thinness of the cortex at this point and the dependent position of the mastoid apex, pus often gravitates toward the groove, perforates the bone and passes into the cervical tissues, producing what is known as Bezold's mastoiditis. Owing to the possibility of the existence of this condition in its incipiency, it is considered good surgery by many operators to remove the muscular attachments at the mastoid tip and inspect its external and digastric region by digital and other examinations for diagnostic and possibly surgical purposes. Thorough inspection of this nature, together

with the complete exposure of all the mastoid cells, even to the large cells at the apex of the process, is regarded as almost essential to modern surgery, for pus often lies unsuspected in cells remote from the chief focus and is only discovered by conscientious search, as just indicated.

Fortunately there is little, if any, risk in opening the bone as we proceed toward the apex, as the storm center of danger is in the upper portion of the mastoid process, where are concentrated the sinus, brain, facial nerve, etc., a veritable quicksand of peril, liable at any time to overpower the careless and even the careful operator in its treacherous soil. The anatomic features of the external auditory meatus (Fig 1.4) are too well understood to warrant extended notice. Suffice it to say that in all mastoid operations its outlines and location should be kept constantly under observation, remembering it as an important landmark to guide the operator to the location of the sinus, cerebrum, cerebellum, facial nerve, antrum, cells, tympanum, etc.

THE MASTOID PROCESS IN YOUNG CHILDREN.

It will be remembered that the foregoing fragmentary observations concerning the external appearances of the mastoid bone relate to the average adult skull, but it must not be forgotten that from infancy to puberty varying changes occur which must be borne in mind by the practical operator, especially as mastoid operations are frequently performed even on very young infants, during which the anatomic features of the immature temporal bone should be kept well in mind. For instance, at birth the osseous portion of the external auditory meatus consists of the tympanic ring, which is essentially a part of the tympanum; in other words, there is no osseous external canal in a newborn babe, although the meatus at that early period of life is relatively as long as in the adult, but it is cartilaginous in structure and gradually acquires osseous characteristics as age progresses. It will thus be seen that the middle ear and antrum lie much nearer the surface of the skull in the child than in the adult; indeed, not more than a millimeter of bone cortex may be present to protect the antrum, and a single blow of the mallet on the chisel may often be sufficient to expose the antrum to view. Neither must it be forgotten that the membrana tympanum does not attain its nearly upright position until adult years are accomplished.

While the mastoid process is present as a small tuberosity at birth, it does not present those prominent and well-marked features so characteristically exemplified in later years, and its surface is traversed by the clearly defined outlines of the mastosquamosal suture (Fig. 3), which, while open at birth, becomes gradually, though not always, closed by ossification at about the age of puberty. The suture communicates with the tympanum, thus explaining the rapidity with which acute purulent otorrhea in young children is often followed by an abscess over the mastoid process. Under these conditions infection may spread from the tympanum to the outer surface of the bone, and present as a fluctuating protuberance easily opened, drained and cured by a Wilde's incision, and it may be that the fortunate termination of such rapidly developing conditions has largely given this classical incision its reputation. These abscesses are sometimes complicated by a coincident fistula extending through the naturally thin cortex over the antrum and connecting the latter with the principal purulent focus.

This, however, is not the only avenue of rapidly forming pus deposits external to the bone of tympanic origin, frequently observed in young children, for in those early periods of life when the bone is soft and porous, and when openings and unossified sutures, either normal or abnormal, may be observed, venous communications from the tympanum to the outside of the temporal bone are the not infrequent carriers of pathogenic organisms that lodge and develop external abscesses, readily cured by a simple incision. In fact, it may be said in a general way that, inasmuch as the young child possesses no distinct mastoid cells except the antrum, most so-called mastoid abscesses in the very young are of the character to which reference has recently been made, and that most operations for relief are often of the simple nature just described.

THE SO-CALLED MASTOID CELLS.

Of all the anatomic features of the adult temporal bone, none is perhaps more interesting to the operator than the so-called mastoid cells. The expression "so-called" is utilized, for, while most of the cells are, in truth, located in the mastoid protuberance, yet the antrum and other cells in the vicinity of the tympanum are imbedded in the denser petrous portion, notwithstanding which fact the expression "mastoid cells" is generally understood to cover them all.

Reference has already been made to the fact that the mastoid cortex differs in density, both in health and disease, varying from a mere shell, easily perforated, to a thick, sclerosed wall, difficult to open. These variations are, to be sure, more prevalent as pathologic than physiologic types, the former usually occurring in acute and the latter in chronic mastoiditis; nevertheless, both conditions may be found in dissections on aurally healthy subjects.

These characteristics of structure observed in the cortex occur as the latter is removed and the underlying cells are exposed, and for purposes of convenience the structure of the bone is referred to as pneumatic, diploic and sclerotic, terms which, although sufficiently comprehensive, are yet sometimes difficult to locate, as the dividing line between the varying characteristics is necessarily vague and uncertain. Nevertheless, an ample mastoid bone, in which the antrum and other air cells are sizeable and well outlined, may with safety be referred to as possessing a pneumatic character. Where the antrum remains of normal dimensions, but the cells are numerically few, and the mastoid cortex and osseous partitions between the air spaces assume appearances of thickness and hardness, the bone is referred to as diploic, and where the antral area is diminished, the cells almost obliterated and the entire process has become of ivory-like hardness and density, the term sclerotic is most appropriately utilized. Some authors possess extreme views of the possibilities of sclerosed mastoids, describing them as containing neither antrums nor other cells, but if such cases are ever seen they must be of exceeding rarity.

The most important cell is, of course, the antrum, situated a little behind and above the middle ear and connected with it by an elongated air cell called the aditus ad antrum (entrance to the antrum). The aditus ad antrum enters the tympanum at its upper posterior portion and is the connecting link between the middle ear, antrum and mastoid cells; indeed, it is impossible to form intelligent views on the physiology and pathology of the hearing apparatus without regarding the tympanum, aditus ad antrum, antrum and mastoid cells as an anatomic unit, and he who does not remember that most prolonged cases of tympanic suppuration maintain their existence by pathogenic contributions from the antrum and aditus ad antrum will certainly fail of achieving the best possible results. The aditus ad antrum not only enters the middle ear at its upper posterior portion,

but also enters the antrum at its upper anterior portion, thus connecting the two chambers at their superior extremities, their pendant and fundal ends dropping perhaps 10 mm. below the connecting aditus, one on the anterior side of the posterior tympanic wall and the other on the posterior side.

The fact that the floor of the antrum lies considerably below the aditus, or connecting space between the antrum and tympanum, shows how difficult it is for purulent antral accumulations to drain into the tympanum from the antrum, and how easy it is for fungating antral granulations to form, which add to the difficulties and complexities of suitable drainage. It is only when the antrum overflows that this occurs, and this circumstance explains why chronic otorrheas fed by antrum disease (as they almost always are) prove so intractable to ordinary treatment. The Eustachian tube, opening, as it does, at the upper anterior portion of the tympanum, can not drain this space of liquid deposits except in case of an overflow. The high situations of the aditus and Eustachian tube, therefore, leave the middle ear practically undrained of liquid deposits, which largely accounts for the frequency of drumhead ruptures during tympanic abscesses. Fortunately, however, the Eustachian tube opening is lower than that of the aditus, so that the former drainage canal is more apt to receive the overflow than the latter, which fact has doubtless much to do with the comparative infrequency of mastoid abscesses after purulent tympanic disease.

A thin and continuous plate of bone separates the temporal lobe of the brain from the tympanum, aditus and antrum, called, according to its location, the tegmen tympani, tegmen aditi and tegmen antri, and it should not be forgotten that this fragile osseous barrier may be easily destroyed by necrosis or force, thus opening a direct avenue of pathogenic invasion to the interior of the cranial cavity. The antrum is the only well-recognized air cell present in the newborn babe, and at this early period of life has almost attained its maximum size. Contrary to the statements of some authors, a few poorly defined mastoid cells may also be found at birth, although their full development does not occur until about the age of puberty. Although the nearly developed antrum is present at birth, its permanent and adult position is not occupied until some years later. In the newborn babe the antrum lies above and somewhat behind the roof of the osseous canal, from whence it gradually drops downward until its permanent position is attained.

The depth of the antrum from the mastoid cortex has proven a fruitful source of discussion for anatomists and surgeons for years, some contending for one depth and some for others. It appears to depend largely on the point of view, or at least on the point on the cortex from which measurements are begun, some operators preferring to commence operative procedures at one point and others at other points. Most operators begin chiseling at a point as close to the meatal spine as possible, the bone at this situation being comparatively thin and somewhat concaved in outline, is nearer to the antrum than at other locations, and consequently this class of observers consider the antrum to be less than one inch from the surface. Broca, on the contrary, operates at a point further back, where the cortex is thicker and somewhat convexed, and he considers the antrum to lie at a depth of about one and one-sixth inches. Dr. Philip D. Kerrison[1] comes to the conclusion that the antrum can be best reached at a point just back of Henle's spine; that the depth of the antrum is here always less than the length of the postero-superior wall of the meatus, and that the antrum practically never lies further from this portion of the cortex than five-eighths of an inch, in all of which opinions he will probably be sustained by a large majority of operators.

The mastoid cells are of all conceivable sizes and shapes and separated from each other by thin bony partitions. A few large cells may usually be seen near the mastoid tip and at the end of the zygoma, and it sometimes happens that pus deposits find lodgment here when none can be discovered in the cells intermediate between the antrum and mastoid apex, thus justifying those advocating the exposure of all cells during operative procedures. Normal cell appearances are, of course, not frequently observed in operative experiences, as under those circumstances pathologic conditions exist, and necrosed, disorganized cell walls, granulations and cholesteatomatous masses, purulent deposits, eburnations and scleroses are seen, presenting views widely different from the healthy temporal bone of the dissecting room.

THE SIGMOID SINUS.

The convexity of the bend of the knee of the sigmoid portion of the lateral sinus forms one of the most important landmarks within the mastoid shell. It usually lies a little less than one inch posterior to the center of the meatus, but may fall further back, or so far forward as to impinge on the meatal wall or lie even further forward than this limit. Vascular connections exist between the sinus and cells, thus offering at least one explanation as to the frequency of sinus infections. The outer osseous covering (Fig. 5) of the sinus is easily broken, and care should be exercised to prevent this accident during operative procedures; still no especial anxiety need be felt if this occurs, although the subsequent operative steps are always thereby considerably embarrassed through constant vigilance lest the dural covering of the sinus be also ruptured.

THE MIDDLE EAR.

The middle ear or tympanum is of great interest to the mastoid operator, and while no exact description of this complicated chamber will be here attempted, yet an effort will be made to dwell on some anatomic features which seem essential to those undertaking to perform surgical operations on these important structures. There is, perhaps, no space of similar size in the body in close contact with so many important anatomic elements as the middle ear, its inner wall being, perhaps, the most interesting.

Passing from before backward, a bony elevation is seen called the promontory (Fig. 6.1), rounded into its convexity by the first turn of the cochlea lying directly underneath; backward and upward is the foramen ovale (Fig. 6.2), communicating with the vestibule, in which the stapes is nestled; nearly underneath the foramen ovale is the foramen rotunda (Fig. 6.3), communicating with the cochlea, from which it is separated by a membranous curtain; between the foramen ovale and the foramen rotunda is the convexity called the pyramid (Fig. 6.4).

Above the foramen ovale and at the angle of the inner tympanic wall and the roof or tegmen (Fig. 6.7) runs forward the bony portion of the Eustachian tube (Fig. 6.5), its roof being continuous with that of the tympanum, aditus ad antrum (Fig. 6.10) and antrum (Fig. 6.8), and being formed of the superior surface of the petrous portion of the temporal bone. An interesting

1. Kerrison: "The Variations in Depth of the Mastoid Antrum." Archives of Otology, June, 1903.

feature of this portion of the petrous bone officiating as a roof for all these spaces is the fact that just over the antrum its surface takes rather an abrupt turn downward and forward, so that the roof of the Eustachian tube is about 11 or 12 mm. lower than the roof of the antrum, a fact which should not be forgotten in probing and chiseling in this vicinity, as an instrument passing into the upper portion of the aditus or tympanum in a too horizontal direction might easily pass through the roof and into the brain.

The facial nerve (Fig. 6.11) enters the petrous bone at the internal auditory meatus, which also affords entrance to the auditory nerve on its way to the labyrinth and enters the tympanic cavity at about the middle of its inner wall, close under the tegmen tympani. It passes gently downward and backward between the convexity of bone covering the horizontal semicircular canal and the foramen ovale and stapes, forming a boundary line between the tympanum and antrum, passes out of the middle ear at its extreme posterior end and then pursues a downward course through the hard petrous structure to the stylomastoid foramen. It will thus be seen that in its bony course it never leaves the petrous bone and does not enter the mastoid protuberance, although on chiseling away the mastoid cells the hard petrous covering of the nerve may be clearly seen at the anterior portion of the cell structure, just back of the bony meatus and below the floor of the antrum, and should be carefully avoided. Its sclerotic casing affords considerable protection.

The shell of bone protecting the nerve as it passes through the tympanum is, on the contrary, very thin, and sometimes entirely absent in spaces, thus accounting for the occurrence of facial paralysis during middle-ear suppurations. Most cases of facial paralysis following mastoid operations are due, not to injury of the nerve after it leaves the tympanum on its way to the stylomastoid foramen, where it is protected by its petrous covering, but to the breaking of the walls of the tympanic Fallopian canal by probing, chiseling or curetting, an accident which may occur to the most painstaking operators, especially when openings of the canal, either of a necrotic or congenital nature, are present.

Indeed, facial paralysis is said to occur from mere jarring of the nerve during chiseling proceedings, an opinion which should argue in favor of gentle manipulations and a soft cushion for the patient's head during all mastoid operations. The Fallopian canal and facial nerve may also be easily injured during the tympanic curettement of an ossiculectomy, and care should be observed during this operation not to curette harshly when in the neighborhood of the canal, and also to keep in mind the possibility of rupturing the thin tympanic roof by too forceful manipulations. The facial nerve is not often completely severed; it is wounded, cut or contused, for the facial paralysis usually disappears in a few weeks or months, which, of course, probably would not occur if the nerve was thoroughly divided. When paralysis develops in from one to three days after the operation it is not due to direct operative violence, but to secondary inflammation of the neurilemma, from which recovery is almost invariable.

In facial paralysis following the operation I have found the most benefit to proceed from the use of electricity, massage, strychnia and measures calculated to improve the general health. At the extreme upper and posterior portion of the inner wall of the tympanic air spaces, between the facial nerve and foramen ovale, anteriorly, and the mastoid antrum, posteriorly, can be seen during operation the hard bony convexity covering the horizontal semicircular canal. Being situated just at the floor of the angle, where the antrum merges into the aditus ad antrum, injury to this portion of the internal ear may be easily inflicted by a blow of the chisel, especially after the posterior wall of the bony meatus has been cut away in the performance of the radical operation. Nevertheless, it would seem that this accident rarely occurs, as not many instances of disturbances of equilibrium and dizziness are recorded after such surgical procedures, symptoms which assuredly would be expected after injury to these centers of equilibrium, and symptoms, which, fortunately, as a rule, pass away in a few days. A partial explanation of the infrequency of injury of the facial nerve on its downward course, and of a similar infrequency of injury to the horizontal semicircular canal during the radical operation, is found not only in their hard and compact coverings (Fig. 6.13) which protect them from accidents, and, to the eye of the operator, distinguishes them from their bony surroundings, but also in the fact that they lie below the plane of proper chiseling procedures, as in cutting away the posterior meatal wall, while the initial space should be wide, the opening should gradually diminish in size as the inner wall of the tympanum is approached. Thus the space produced should be triangular in shape, with the apex at the inner wall of the tympanum, and the base at the opening of the bony meatus. By careful chiseling, both the descending portion of the facial nerve and the convexity of the horizontal semicircular canal will lie outside the line of incision and escape injury.

The Roof of the Tympanum.—The roof of the tympanum (Fig. 6.7), or tegmen tympani, as it is called, is a thin plate of bone, belonging to the superior plate of the petrous portion of the temporal bone, on which rests the temperosphenoidal lobe of the brain (Fig. 7.1). It is thin and almost translucent in structure, and sometimes is perforated by congenital openings, or necrotic apertures after tympanic suppurations. Spaces of the latter character are sometimes closed by excessive tympanic granulations, which, pathologically or mechanically, protect the brain from infection, and whose removal, by curettement or otherwise, may be quickly followed by meningitis, brain abscess, etc. The tegmen tympani extends as far outward as the petrosquamosal suture, which is open in early life, before suture ossification occurs, and sometimes remains open in adult years, thus affording an excellent channel for the transmission of infection from the tympanum to the cerebral cavity. Small veins pass through the posterior portion of the tegmen tympani to the superior petrosal and sigmoid sinuses, a fact which must not be forgotten in searching for the etiology of phlebitis. In front and beneath the middle ear lies the carotid artery, separated from the former by a thin osseous partition, perforated for the passage of blood vessels. Running between the middle ear and carotid artery, and directly underneath the floor of the tympanum, may be found the jugular fossa for the transmission of the bulbous portion of the internal jugular vein, and connected with the middle ear by minute perforations for the transmission of small veins and nerve filaments.

The Attic.—Perhaps the most interesting portion of the middle ear is the attic (Fig.8.8), or epitympanic space, located above the superior wall of the meatus, invisible on inspection by the speculum, and containing the major portion of the ossicles (which are almost fully developed at birth), the chorda tympani nerve (Fig. 8.5)

after it passes from the facial and glides between the malleus (Fig. 8.7) and incus (Fig. 8.4) and several spaces or pockets produced by the muscles, bones, tendons and fasciæ of this small but important cavity. Owing to this complexity and network of tissue, both bony and soft, drainage from the attic to the main portion of the tympanum is sometimes materially diminished, especially in case of considerable swelling incident to inflammatory conditions. Infectious products may remain in the attic, perhaps obtaining lodgment in one or more of the spaces formed by the ossicles and soft tissue, and finally pass back into the antrum and explode as a mastoid abscess. The ossicles themselves, encased in soft tissue, lying as they do directly in the pathway between the aditus ad antrum and the tympanum, may by their very position restrict drainage from the aditus and mastoid antrum, and thereby perpetuate a chronic otorrhea or precipitate a mastoid abscess. The former condition is often promptly relieved by the removal of the malleus and incus, the stapes (Fig. 8.3) never being removed intentionally in purulent conditions for fear of opening an avenue of infection from the tympanum to the labyrinth by way of the foramen ovale.

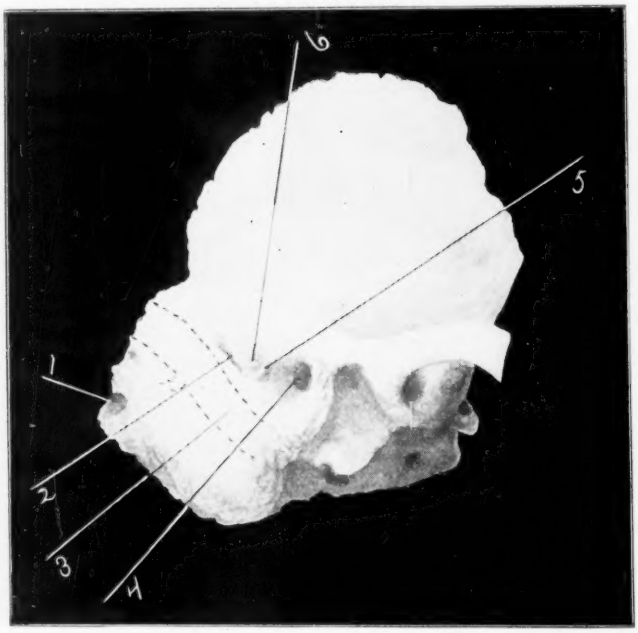

Fig. 1.—1, Mastoid foramen; 2, remains of mastosquamosal suture; 3, location of sigmoid sinus; 4, external auditory meatus; 5, Henle's spine; 6, bony porosities, and site at which operative mastoid procedures should be commenced.

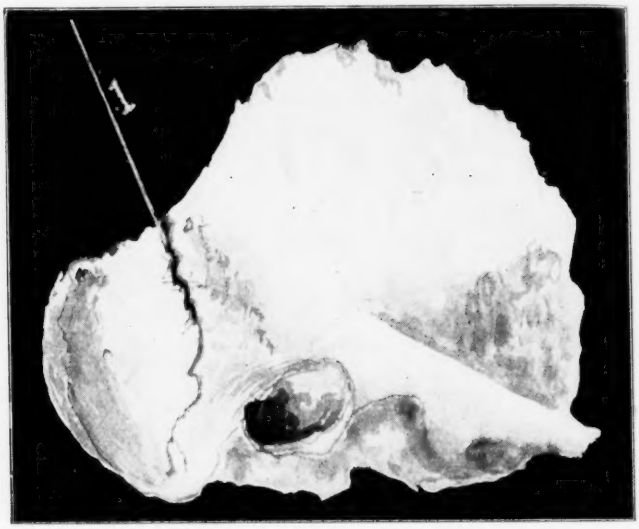

Fig. 3.—Mastosquamosal suture.

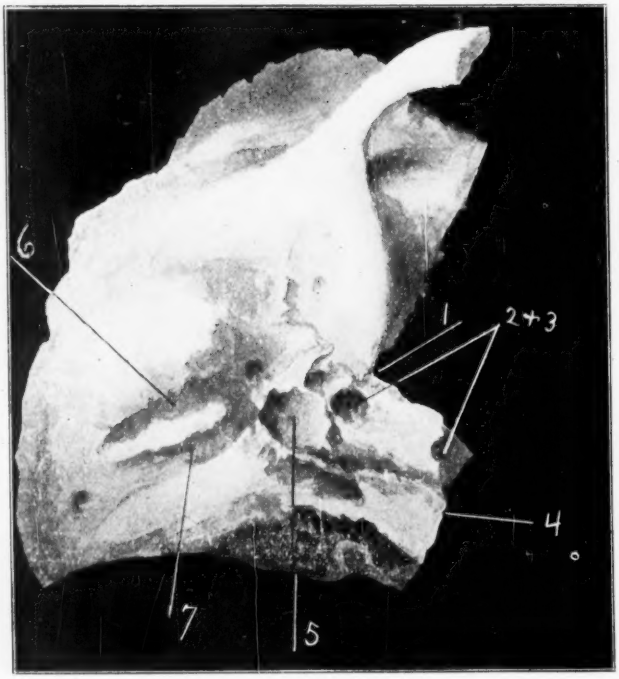

Fig. 2.—1, Location of Eustachian canal (underneath); 2, carotid canal; 3, carotid canal; 4, location of groove for inferior petrosal sinus (underneath); 5, jugular fossa; 6, digastric groove; 7, groove for occipital artery.

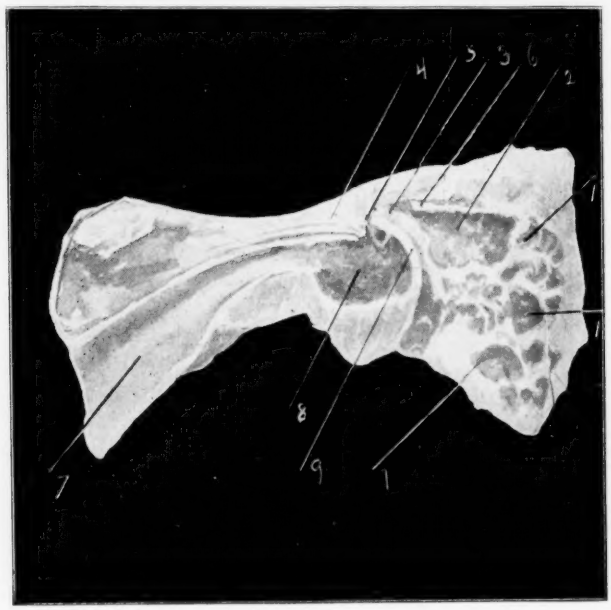

Fig. 4.—1, Mastoid cells; 2, mastoid antrum; 3, posterior wall of middle ear; 4 and 5, tegmen tympani; 6, tegmen antri; 7, Eustachian tube; 8, middle ear; 9, course of facial nerve.

Avenues of Infection.—One of the interesting features of the middle ear space is the number of avenues by which infection may spread from that cavity to the contiguous parts. This can not be better described than by using Macewen's list, as follows:

1. **The external auditory canal:**

2. The eustachian tube and canal for the tensor tympani muscle.
3. The mastoid antrum and cells.
4. The petrosquamosal fissure.
5. The mastosquamosal fissure.
6. The fenestræ ovale and rotunda.
7. The Fallopian canal.

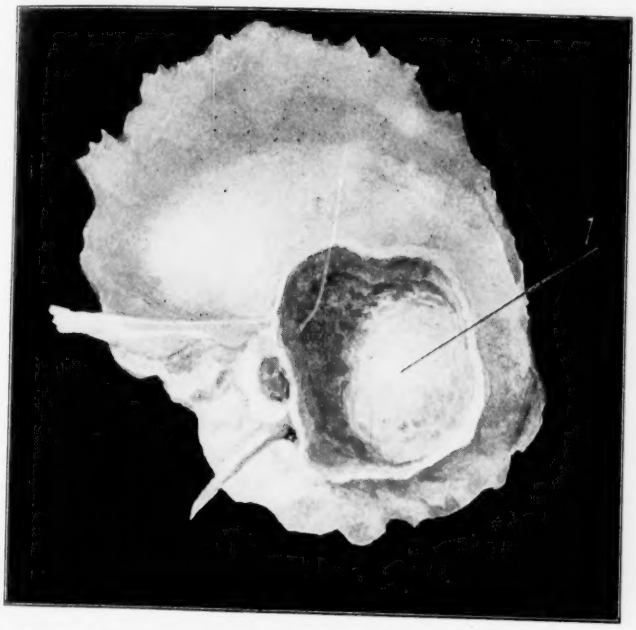

Fig. 5.—Bony covering of sigmoid sinus.

14. Communicating veins between the tympanum and dura mater.
15. The carotid canal (by small connecting arteries, veins and nerves).
16. The jugular fossa (by small connecting veins and nerves).
17. The tympanic branch of the internal maxillary artery.

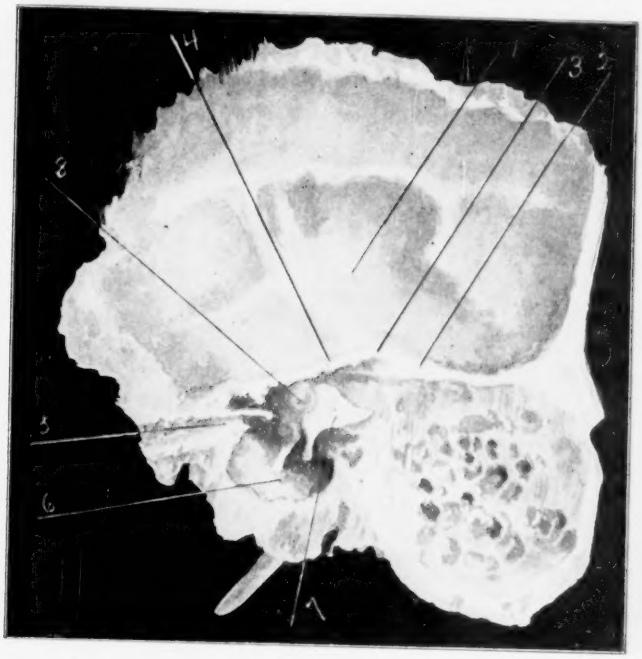

Fig. 7.—1, Situation of temperosphenoidal lobe; 2, tegmen antri; 3, tegmen aditi; 4, tegmen tympani; 5, Eustachian tube; 6, middle ear and drumhead; 7, incus; 8, malleus.

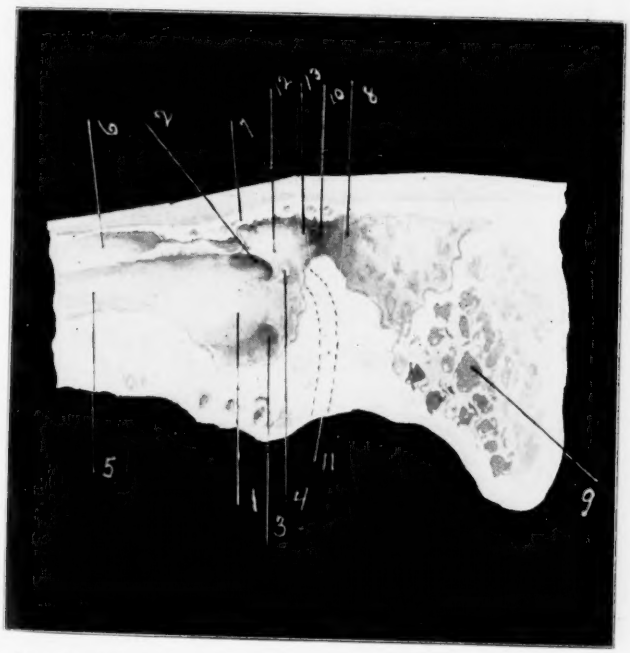

Fig. 6.—1, Promontory; 2, foramen ovale; 3, foramen rotundum; 4, pyramid; 5, Eustachian tube; 6, canal for tensor tympani muscle; 7, tegmen tympani; 8, mastoid antrum; 9, mastoid cells; 10, aditus ad antrum; 11, course of facial nerve; 12, facial canal; 13, covering of horizontal semicircular canal.

8. A foramen for the passage of Jacobson's nerve.
9. The fossa subarcuata.
10. The lateral and sigmoid sinus (by small connecting veins).
11. The superior petrosal sinus (by small connecting veins).
12. The inferior petrosal sinus (by small connecting veins).
13. The temporomaxillary vein (by small connecting veins).

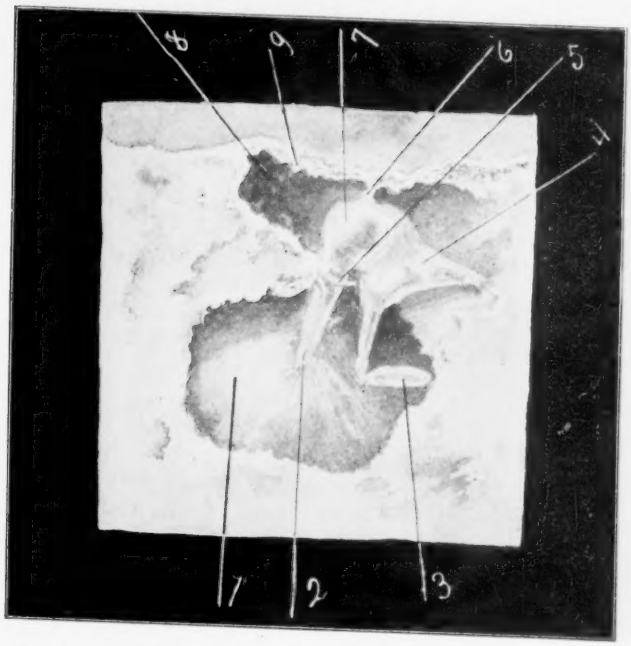

Fig. 8.—1, Drumhead; 2, malleus; 3, stapes; 4, incus; 5, chorda tympani nerve; 6, suspensory ligament of malleus; 7, malleus; 8, attic; 9, tegmen tympani.

Other Points of Interest.—Searching the inner aspect of the temporal bone for areas of interest to the mastoid operator, attention will be arrested by the concavity or fossa for the lodgment of the temporal lobe of the brain, formed (so far as the temporal bone is concerned) by the inner plate of the squamous and the superior plane of the petrous portions of the temporal bone. Of equal interest is the concavity (Fig. 12,2) or fossa formed by

the inner plate of the mastoid and inner posterior angle of the petrous, in which rests the cerebellar hemisphere, and on which lies the sigmoid portion of the lateral sinus. The various sides of the petrous bone may also be studied with interest and profit by the mastoid operator. The temporosphenoidal lobe (Fig. 11.1) of the brain lies about as low in the temporal fossa as the superior border of the zygomatic process, its lateral wall

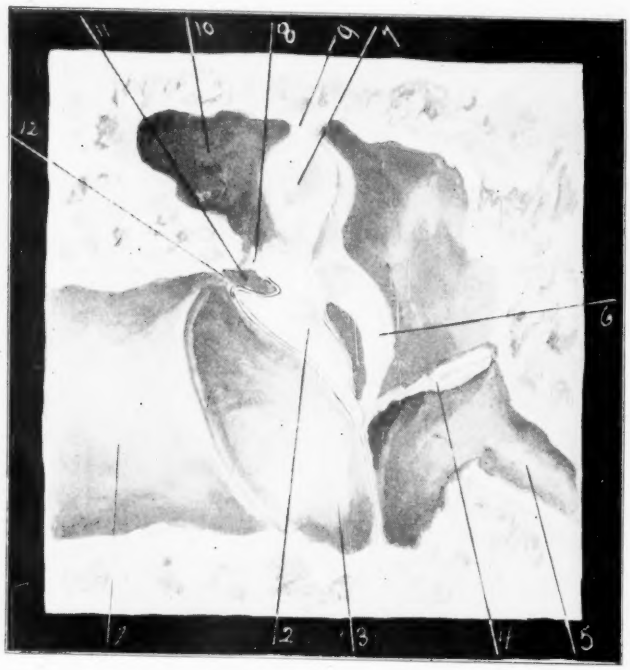

Fig. 9.—1, External auditory canal; 2, malleus; 3, drumhead; 4, stapes; 5, Eustachian tube; 6, incus; 7, malleus; 8, external ligament of malleus; 9, suspensory ligament of malleus; 10, attic; 11, Prussaks chamber; 12, membrana flaccida.

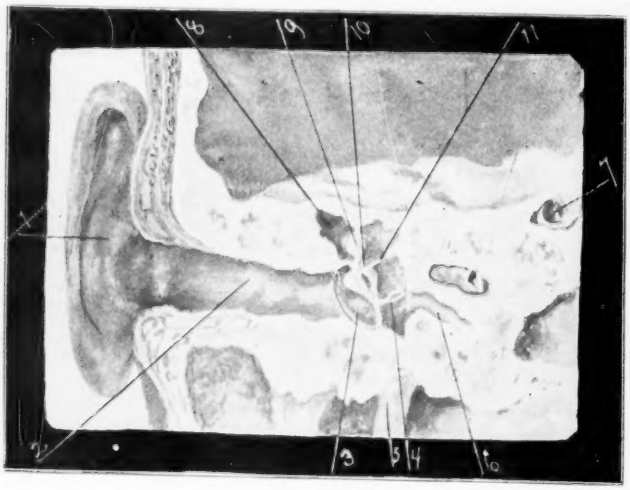

Fig. 10.—1, Auricle; 2, external auditory canal; 3, drumhead; 4 stapes; 5, internal carotid artery; 6, Eustachian tube; 7, internal carotid artery; 8, attic; 9, malleus; 10, incus.

resting against the squamous, and its base on the superior side of the petrous bone.

Just above the zygomatic process and external meatus the squamous is very thin, and it is at this point that the bone can be most advantageously opened by trephine or chisel, in search of a temporosphenoidal abscess, unless it is deemed best to enter the cranium through the tegmen of the tympanum, aditus ad antrum, or antrum, or all together, an avenue preferred by most operators on account of convenience and better drainage. It should not be forgotten that the dura is closely attached to the petrous bone at the floor of the fossa, and that the middle and posterior cerebral arteries may be ruptured in operating on the temporal lobe.

To the mastoid operator the posterior cranial fossa, and especially that portion of the fossa formed by the mastoid and petrous portions of the temporal bone, is

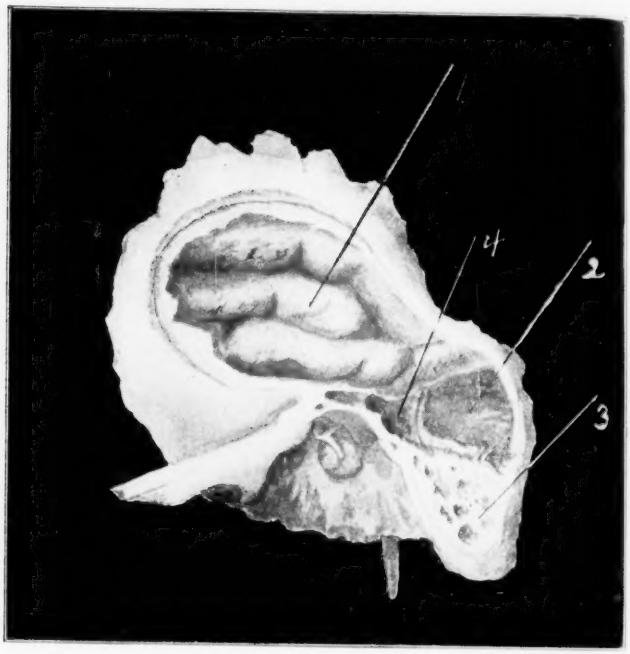

Fig. 11.—1, Temperosphenoidal lobe; 2, cerebellum; 3, mastoid cells; 4, antrum.

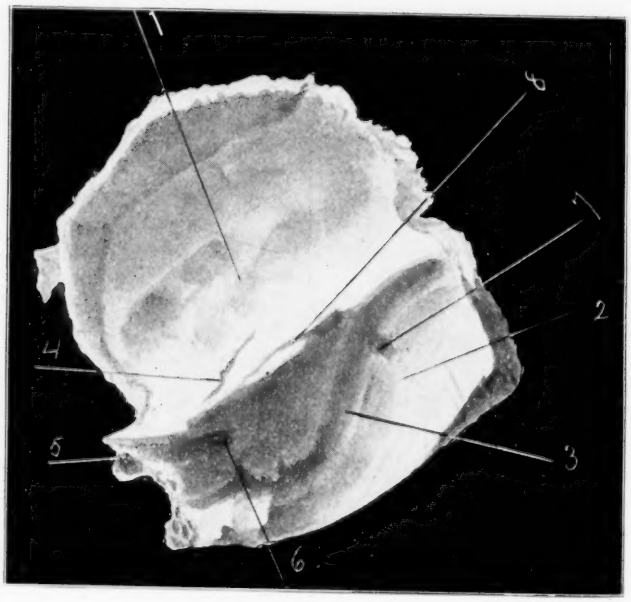

Fig. 12.—1, Concavity for temperosphenoidal lobe; 2, concavity for cerebellum; 3, groove for sigmoid sinus; 4, remains of petrosquamosal suture; 5, carotid canal; 6, internal auditory meatus; 7, mastoid foramen; 8, groove for superior petrosal sinus.

of especial interest, for it is here that sigmoid and cerebellar complications to aural diseases occur, which together constitute a large majority of the unfortunate sequelæ of purulent otorrhea. The sigmoid portion of the lateral sinus (Fig. 12.3) assumes its most prominent convexity forward at this point, the venous blood having

traveled from the torcular herophili, in the lateral sinus, until the sinus becomes known as the sigmoid, on account of its supposed resemblance to the letter S. From here the blood passes downward to the jugular bulb, and from there out of the head by way of the internal jugular vein. It must be remembered that the venous sinuses of the cranium are merely spaces between the separated layers of the dura mater, and that when the osseous side of the sigmoid sinus is removed it is the external layer of the dura mater which is seen to constitute the outer wall of the soft sinus, the inner surface of the sinus being lined by endothelium. At about the middle of the sigmoid sinus the mastoid vein is given off, which passes through the mastoid bone in the mastoid foramen (Fig. 12.7) to join the occipital cutaneous vein on the outside of the head. The sigmoid sinus bends sharply forward in the inner plate of the mastoid bone, so that its most marked convexity, or knee, as it is called, lies just above and on a horizontal line with the most dependent portion of the mastoid antrum. In other words, the most prominent portion of the sinus lies very close to the field of active work in all mastoid operations.

The exact relative position of the sinus is, therefore, of great importance to mastoid operators and should be carefully studied. Ballance places the bend of the sinus as one inch posterior to, and a quarter of an inch above, the center of the meatus, and this estimate is probably nearly correct for a large majority of cases. It is seldom further back than this, but is often found further forward. Hessler finds twelve cases in the aural reports of the world where the sinus lay even in front of the mastoid antrum. Fortunately, such extreme malpositions are very rare, as seen by Hessler's report, but as annoying anterior malpositions of the sinus may be frequently seen, the operator should be always on the alert to detect them and should always chisel slowly and carefully, brushing away the débris as progress is made, that careful inspection of the operative field may be obtained. The thickness of the osseous wall separating the mastoid cells from the sigmoid sinus is only a few millimeters in extent, under normal conditions, and when necrosis and exuberant granulations are present the intervening wall may be extremely thin, or even absent altogether, and the sinus will be reached with little or no effort, beyond a cleansing curettement, and be seen as a whitish-blue channel as the venous blood shows through the gray dural covering. The closer the proximity of the sinus to the meatus the more perplexing becomes the operative procedure, and as the bend of the sinus sometimes lies close to the posterior meatal wall, and therefore exactly in the area of the ordinary mastoid operations, extreme care must always be taken until a malposition of the sinus can be excluded.

In case, however, a malposition is present the operator should, in chiseling, keep close to the meatal wall and endeavor to chisel around the prominence of the sinus, dissecting it out, as it were, or it may even be necessary in reaching the antrum to pursue the method of Stacke and arrive at the antrum by first breaking down the posterior superior wall of the meatus and then working backward and upward until the antrum is reached, which may be at a point directly underneath the sigmoid sinus. The ordinary depth of the sinus, from the outer surface of the mastoid cortex, varies very much, as may be imagined, but it may be said that about ten millimeters is a fair average, and Koerner's investigations show that the right sinus usually lies deeper from the surface than the left, a fact which should not be forgotten in operative work.

Besides those features already enumerated, the petrous portion of the temporal bone presents other points of interest to the mastoid operator, such, for instance, as the osseous Eustachian canal, opening on the jagged anterior surface of the bone, which is divided into two passages, the upper for the tensor tympani muscle (Fig. 6.6), and the other and larger for the Eustachian tube, lined with ciliated epithelium, whose wavy motions away from the tympanum tend to aid in the drainage of the tympanum and prevent the entrance of pathogenic organisms to the middle ear. The large opening for the carotid artery having one aperture in the under surface of the petrous, as the artery enters the bone, and another in the anterior surface, as it leaves it, after having made an abrupt curve, is also of interest, and as necrosis of the tympanum may in rare cases erode so deeply as to open the carotid and produce most alarming hemorrhage, uncheckable save by the prompt ligation of the carotid artery, these important anatomic points should be kept well in mind.

On the posterior surface of the petrous bone will be found the internal auditory canal leading into the interior of the bone and giving passage to the auditory and facial nerves, and as this channel sometimes is the avenue for migration for pathogenic organisms from the labyrinth and tympanum to the brain and the means, therefore, of producing brain abscesses, etc., it is of importance to the surgeon.

Running along the superior border of the petrous bone is a well-marked groove for the passage of the superior petrosal sinus (Fig. 12.8) emptying into the sigmoid sinus, having proceeded from the cavernous sinus. On the under surface of the bone is another groove lodging the inferior petrosal sinus, carrying blood from the cavernous sinus to the jugular bulb.

72 Madison Street.

REPORT OF A CASE OF BRAIN TUMOR.*

F. C. NEU, M.D.
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AND
J. A. MACDONALD, M.D.
Assistant Physician Central Indiana Hospital for the Insane.
INDIANAPOLIS.

The following case is considered of sufficient interest to report: 1. Because of the extreme rarity of this form of growth. 2. Because of the extreme size to which it grew. 3. Because it offers a typical illustration of nearly all, if not all of the effects of a slowly developing intracranial growth. 4. Because of the clinical manifestations shown.

CLINICAL REPORT BY DR. MACDONALD.

Patient.—H. B., aged 36, was admitted to the Central Indiana Hospital for the Insane, October, 1898, was discharged September, 1902, as improved. Re-admitted Dec. 30, 1904.

Family History.—Parents living and in fair health. One maternal uncle epileptic, one cousin insane.

Personal History.—There was no report of severe illness or injury in childhood. At the age of 16 he developed major epilepsy, which was attributed to a sun stroke. Ten years later his left eyeball became abnormally prominent, but observation is faulty as to its first appearance. Four years later a right hemiplegia developed. On admission his mental state was found to be one of arrested development. He was amiable during the interval, but became very irritable before the convulsions, and often had outbreaks of fury following them.

* Read before the Marion County Medical Society, Indianapolis.

Physical Examination.—Patient is of medium height, and of powerful muscular development. The cranium is apparently symmetrical, except that just behind the left external orbital process an abnormal prominence, smooth, not abrupt in outline, rises 1 cm. above the general surface, and is about 10 cm. antero-posteriorly and 5 cm. vertically. The percussion note over the prominence is flat and the finger receives the impression of greatly increased resistance, and apparently is not sensitive to pressure. The eyes are prominent, the left excessively so. The pupils are unequally dilated, the left being the larger, and both react slowly to light. There is an extreme degree of optic atrophy. The mouth is drawn slightly to the left. Speech is confined to some half-dozen words. There is a partially-recovered right hemiplegia with some contracture of the hand and foot. Both knee-jerks are exaggerated, the right more marked. There is right ankle-clonus and Babinski's sign on the right side. The mental condition made other examinations futile. On Dec. 19, 1905, the patient fell during a convulsion and fractured the right inferior maxilla. The shock was rather extreme and three days later he developed serial convulsions, then pneumonia supervened and caused death.

Autopsy.—Head enlarged and brachycephalic in type. Bulging of the left frontal area, of both eyeballs, the left excessively so. Thickness of the skull is very unequal and irregular, varying from that of an egg shell to 1 cm. thinning being particularly marked in the floor of the left anterior and middle fossæ and of the left frontal, squamous, and parietal bones. There is also atrophy of the petrous portion of the temporal, of the body of the sphenoid, and of the sphenoidal ridge on the left side, enlarging the anterior and middle fossæ, and making them practically continuous with each other. At the lower and anterior part of the left squamous just above the floor of the middle fossæ, are two cone-shaped projections, projecting inward about 1 cm., their bases gradually spreading, becoming continuous with each other at their adjoining surfaces.

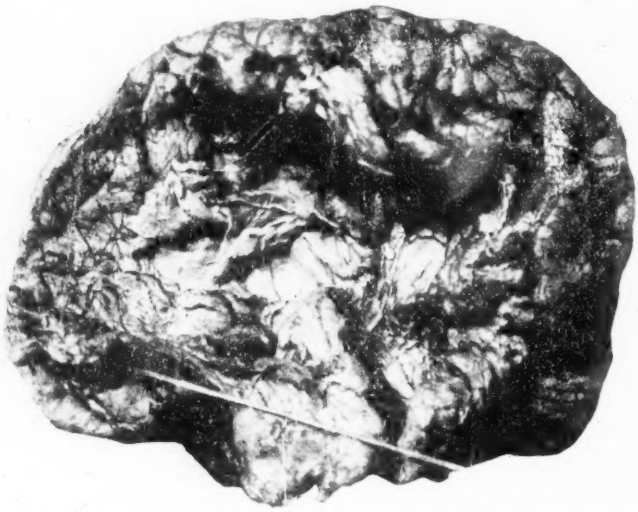

Fig. 1.—Anterio-lateral view of left hemisphere. (*a*) Tip of temp. sphen., lobe turned down.

There are moderate dural adhesions, most marked on the left side, with thinning of it over the anterior part. There is no subdural or arachnoidean fluid.

Attached by a base 6 to 3 cm. to the inner surface of the vertical portion of the left frontal bone at its outer part is a hard, whitish, nodular growth, of cartilaginous consisteney, with small areas of slight calcareous infiltration. Its weight is 575 gm., its size 16x12x9 cm., and extends backward and inward, taking the place of the greater part of the outer portion of the left frontal, left parietal and left temporo-sphenoidal lobes. On its outer surface are two depressions corresponding to the cone-shaped projections from the skull above described.

There is a second smaller growth, 3x2x5.5 cm. in size, springing from the inner surface of the left squamous just above and anterior to the base of the petrous portion, attached by a small pedicle-like base, and of the same structure as the large tumor.

There is an oblique fracture of the right inferior maxilla at the point of junction of the horizontal and vertical portions extending back, in and upward. A moderate amount of callous, easily broken down, surrounds the seat of fracture.

The brain weighs 1,680 gms. There is complete displacement by atrophy of the left frontal lobe, except a layer averaging about 2 cm. in thickness on its mesial and internal-inferior surface, also of the outer portion of the left parietal lobe, and of the central three-fifths of the left temporo-sphenoidal lobe. The corpus striatum and optic thalamus with the intervening internal capsule are very much decreased in size and displaced inward and downward. The left lateral ventricle is almost closed, the right lateral and the third are much dilated. The first, third, fourth, fifth, sixth, seventh and eighth cranial nerves on the left side are smaller than on the right side and somewhat gray in color. The optic nerves, commissure and tracts are similarly affected, the left more so than the right. The spinal cord is apparently normal.

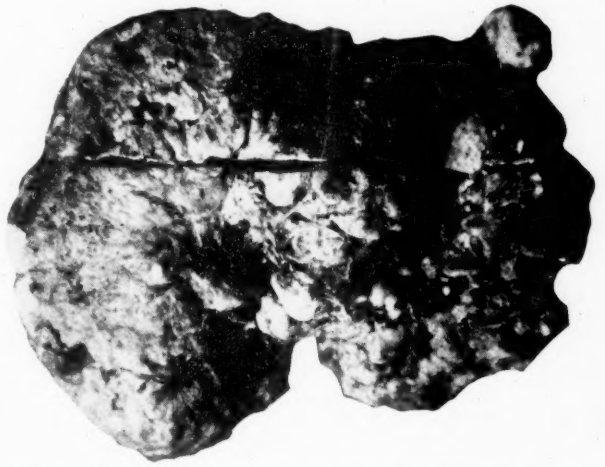

Fig. 2.—External surface view of part lying next to bone. (*a*) Anterio external and point of attachment.

Thorax.—There is slight, fatty infiltration of the right ventricle of the heart, slight arteriosclerosis of the aorta, most marked about the coronary orifices and involving the coronary vessels. There are extensive, diffuse, fibrous, band-like adhesions in both pleural cavities plus an acute fibrinous exudate over the base of the right lower lobe. The lower lobe and base of the upper lobe of the right lung are in a condition of mixed red and grey hepatization. There is also slight hypostasis of posterior and lower portion of the lower left lobe. The thyroid gland is moderately enlarged, tending to cystic formation. There is some hyperplasia of the bronchial glands and congestion of the bronchial mucosa. The remaining cervical and thoracic structures are apparently normal.

Fig. 3.—Marginal view, inner surface.

Abdomen.—Apart from the kidneys, the abdominal organs do not show any gross pathologic changes. The kidneys are in a condition of chronic parenchymatous-nephritis. The

right renal pelvis is dilated and pouch-like, the mucosa thickened and covered with a somewhat yellowish exudate, and the cavity contains a mulberry-like calculus 15 mm. in diameter. The right ureter is slightly dilated.

Microscopic Examination.—The brain tumor consists of practically normal hyalin cartilage throughout. The renal calculus is somewhat stratified and chemically consists mainly of phosphates, some oxalates, traces of xanthin and some organic material.

Osseous deposits in the dura, or small osseous projections from the inner surface of the skull are not infrequent, but the development of a definite tumor, benign in character, is a rare condition, especially chondroma. Gowers does not mention them. Mills refers to them as usually springing from the base of the skull in the form of flattened masses arising either from the bones, or from the dura, and lying like plates on the brain. Starr also refers to their extreme infrequency. No report has been discovered of any intracranial growth of the size of this one. Various authors refer to some the size of oranges, a closed fist, etc., so that this evidently is of an extraordinary size.

The effects produced by a slowly growing intracranial tumor are well shown in this case, involving, as it does, all the structures entering into the formation of the cranial cavity, as well as the contents thereof.

The case is illustrative of a group whose clinical manifestations are similar to and not always differentiable from those constituting the symptom-complex of true, idiopathic epilepsy. Judging from the clinical report one may safely assume that the growth was present at the time of the first so-called epileptic seizure. To what extent it had developed at that time, or to what degree it had involved the brain substance is impossible to say. It is possible, of course, that the epileptic seizures were primary, and the development of the tumor a secondary phenomenon, which may have been the result, directly or indirectly, of those seizures or the conditions producing them, or it may have had no connection with them at first.

The probabilities are, however, that the growth was the direct and exciting cause of the epileptiform seizures, and it does seem that there should be some means rendering possible a diagnosis between the two conditions at a time when operative procedures would be beneficial. But, as yet, we must confess to an inability to do so, since, on the one hand, one often meets with cases which, during life, are looked on as true idiopathic epilepsy, and the autopsy reveals the presence of some organic lesion, while, on the other hand, cases are also met with regarded as epileptoid, due to some organic lesion, but operation and autopsy fail to discover existence of any such trouble.

CALCIFICATION OF THE VAS DEFERENS AND THE SEMINAL VESICLES.*

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During my stay in the Pathologic Institute of the German University in Prague, I had the opportunity of examining some cases of pathologic changes in the ampulla of the vas deferens and the seminal vesicles. Two of these seemed to be more than ordinarily interesting and, as little is to be found in the literature concerning calcification, particularly in this region, they appear to justify publication.

CASE 1.—From Professor Pribram's clinic.

Patient.—Man, aged 63, died at 5 a. m., Feb. 4, 1906. The body was brought to the pathologic institute with the clinical diagnosis of *endarteritis obliterans, gangraena digiti I. et II. pedis sin, tetanus traumaticus.*

AUTOPSY.

Anatomic Diagnosis.—This was briefly as follows: Traumatic tetanus. Old endocarditis involving the bicuspid valve, with stenosis of the opening of the left vein and thrombosis of the valves. Embolism of left popliteal artery, with consequent necrosis obliteration of first and second toes of the left foot and ulceration of the skin of the left heel. Cicatrices of the kidney due to infarcts. Hemorrhage into the left rectus abdominis muscle. Suppurative bronchitis.

Macroscopic Findings.—The genital organs were without pathologic changes, except that in the wall of the mesial part of the inferior third of the right seminal vesicle near the right vas deferens a mass of bone-like consistency was found, egg-shaped of the size of 0.25 c.cm. (Fig. 1). This condition of the seminal gland could be caused by only two pathologic processes: (a), a partial calcification of the seminal gland, not unlike a case described by Chiari in 1903; or, (b), by a phlebolith. When strong sulphuric acid is applied to a small piece of calcified mass characteristic crystals of calcium sulphate are produced. This chemical test was not applied here.

Microscopic Findings.—A microscopic examination of the

Fig. 1.—Calcification of the right seminal vesicle. a, Section of the calcified mass in the seminal vesicle. V. d. dex., Vas deferens right side. Normal. V. s. dex., The right seminal vesicle showing the calcified mass. Prost. Gl., Prostate gland. Normal.

seminal gland was undertaken in order to decide the true nature of the pathologic findings. A horizontal lamella was taken from the place of the seminal vesicle, which apparently seemed to be bone-like in consistency; it was put in Perényi's solution (10 per cent. nitric acid, 40 c.cm.; absolute alcohol, 30 c.cm.; 0.5 per cent. watery solution of chromic acid, 30 c.cm., and washed in 70 per cent. alcohol). After this process the bone-like consistency disappeared, and one could now conclude that this appearance was undoubtedly due to lime-salts. It was then embedded in celloidin, and the microscopic sections were stained with hematoxylin-eosin and Van Gieson's stain.

The epithelium was everywhere well preserved, and presented one layer only. The mucosa was without any pathologic changes, but, in the intercellular substance of the two outer layers of the tunica muscularis, a network-like mass, deeply stained by hematoxylin. It was homogeneous, and in places fine globular granules, with some concentric bodies here and there within the network, could be seen. The mass was circular in outline, following the circular and the outer muscular layers especially. (Fig. 2.) There was no tendency of the mass to enter in proper union with the tissue; it seemed to be undoubtedly only a lime-salt infiltration in the intercellular substance. The adjacent connective tissue in some places was found to be sclerotic.

* From Professor Chiari's Pathologic Institute in Prague.

COMPARISON WITH CASES REPORTED BY CHIARI.

In 1903 Chiari[1] reported two cases of calcification of the vas deferens, and one case of calcification of the vas deferens and of the seminal vesicle. It may not be out of place, therefore, to summarize briefly some of Chiari's findings and conclusions. He found in one of his cases the ampulla with the seminal gland altered into a hard mass impossible to cut with a knife. Externally the ampulla and the seminal vesicle were about normal in size,

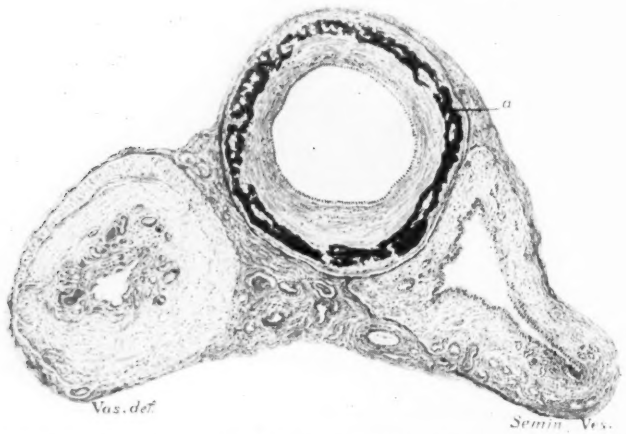

Fig. 2.—Cut section of the right seminal vesicle. Low power. a, Represents the calcified mass in the muscularis. Other structures normal.

as well as the lumen in which the mucosa was also found the form of small white spots in the tunica muscularis, and the latter could be seen with the naked eye. The ejaculatory ducts were free from the calcification. In fresh sections from the wall of the ampulla and the seminal vesicle under the microscope were found amorphous opaque bodies lying in the muscularis in numerous

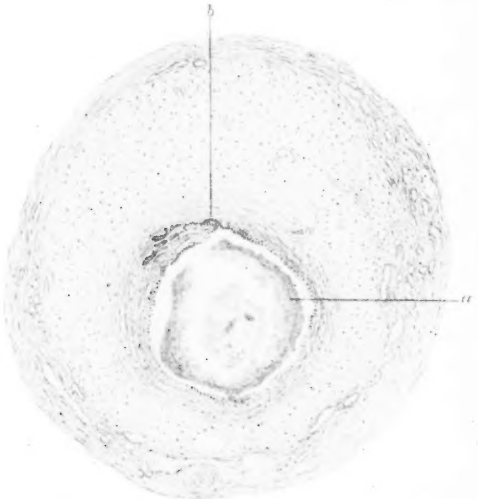

Fig. 3.—Obturation with calcification of the left vas deferens. a, Obturated lumen with calcified mass. b, The epithelial layer. Other parts normal.

places. When a little sulphuric acid was added to these bodies on the slide, the masses became loose, evolution of gas followed and finally deposits were left behind which appeared to represent crystals of calcium sulphate.

Other parts were decalcified, prepared and devoted to the ordinary microscopic examination. The results obtained were the following: Spermatozoa were found in the ampulla and in the seminal gland. The epithelium was well-preserved and presented one layer only; the mucosa was found to be intact. In addition, Chiari describes a brownish granular pigment at the base of the cylindrical epithelial layer; this was negative in my case. He also mentions a sclerosis of the connective tissue in the areas of calcification. The infiltration of lime salts

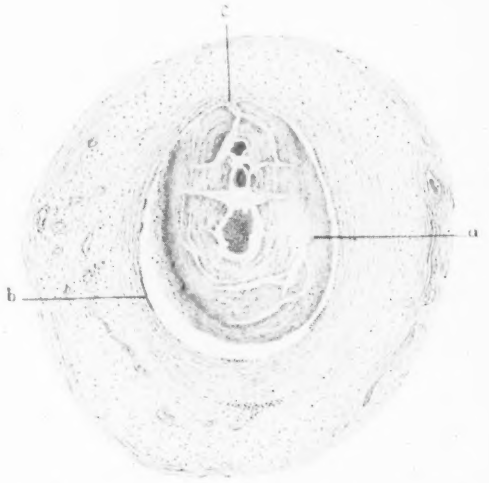

Fig. 4.—Same as Figure 3. c, Shows connective tissue penetrating the calcified mass within the lumen.

was found to be situated exclusively in the tunica muscularis.

These findings excellently verify the microscopic picture of my first case. Finally, we reach the following conclusions: (1) My case presents a complete analogy with the cases of Chiari. (2) The calcification in all

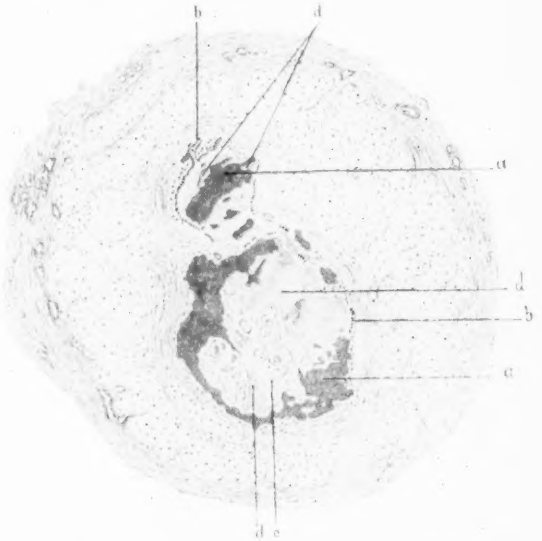

Fig. 5.—Same as Figures 3 and 4, but in addition this shows the ossification or bone-like structures, d.

the cases occurs in elderly men. (3) In Chiari's cases and also in my case, a pure regressive metamorphosis of the tunica muscularis without any pathologic changes in the mucosa, and without any inflammatory process of the ampulla of the vas deferens and the seminal vesicle respectively, was apparent.

With regard to the etiology of the sclerosis of the connective tissue, it is well said by Chiari, that: "this may be an expression of a senile change of the muscularis." Furthermore, he found by a comparative examination

1. Chiari: "Ueber senile Verkalkung der Ampullen der Vasa deferentia und der Samenblasen." Zeits. f. Heilkunde. Abteilung für path. Anatomie, 1903.

of the ampulla of the vas deferens and the seminal vesicles of several old men, that a sclerosis of the connective tissue is not seldom found and that calcification may follow sclerosis. A slight senile osteoporosis may cooperate, or an affection of the kidneys, which is common in old age, may also be responsible for these processes, perhaps hindering the excretions of the lime salts.

This form of calcification, as suggested by Chiari, should be distinctly separated from the calcification of these same organs by chronic inflammations, which changes have been described by different authors under the name of ossification. Lallemand[2] has reported a case of suppuration, induration, and ossification of the seminal glands, due to chronic inflammation. Rokitansky[3] declares, that in the thickened wall of the seminal vesicles "small bone formation" is sometimes found. Klebs[4] speaks of calcification in the chronically inflamed seminal vesicles. Guelliot[5] describes a case of induration of the walls of the vas deferens and the seminal vesicles after repeated attacks of blennorrhea in a tuberculous patient. Orth[6] speaks of chronic deferentitis and *vesiculitis seminalis*, in which a gradual thickening of the walls can appear and in which an infiltration of lime salts can take place.

Since the publication of the reports by Chiari, a careful search of the literature for the report of such cases of calcification of the genital organs proved fruitless. Posorisky[7] recently published an extensive article on heteroplastic bone formation in the tissues and organs in general. In connection with the genital organs, he states that in the genitourinary system in males as well as in females, bone formation occurs very seldom, and does not mention at all the calcification of the vas deferens and the seminal glands.

CASE 2.—The patient, a man aged 53, died Nov. 9, 1904. The body was sent to the autopsy room from Professor von Jaksch's clinic, with this diagnosis: Moribund when received. Left hemiplegia, probably from apoplexy. Pulmonary tuberculosis. Circumscribed peritonitis. Icterus of unknown origin, perhaps from cirrhosis of the liver. Anal fistula.

Anatomic Findings.—Anal fistula, probably tuberculous. Ichorous pus in the cellular tissue, in the preperitoneal cavity, and around the rectum. Bloody, fibrinous peritonitis. General icterus. Softening of brain of long standing in right hemisphere, from embolus in artery in right fissure of Sylvius. Former tuberculosis of apex of lungs and peribronchial lymph glands. Tuberculous ulcer of small intestine.

Genital Organs.—The left vas deferens for nearly 2 cm. just a little above the point where it joins with the seminal vesicle was found to be hard and bone-like in consistency. On cut surface across, one could find within the lumen a "calcified clot." The left seminal vesicle was found to be normal.

The right vas deferens and seminal gland were apparently normal, not only externally but internally.

Microscopic Examination.—After decalcification cross sections from the left vas deferens showed above and below the part which was hard in consistency quite normal structures. In the hard portion (Figs. 3 to 5), one could find a partial thrombosis of the vas deferens by a calcified and coagulated mass, with a partial obliteration of the lumen by connective tissue, which contained the calcified masses with small pieces of bone-like structures (Fig. 5, d). This connective tissue was growing inward from the wall of the vas. In this connection may be mentioned the color display which the sections showed under the microscope when stained with methyl-violet. The bone-like structures were violet-red, the calcified masses took dark-brown color, while the connective tissue was light red. The epithelium in places was intact, while in some parts of the sections it was either displaced or entirely disappeared.

2. Lallemand: "Des pertes séminales involontaires," Paris, 1836-1841 citiert nach Guelliot.
3. Rokitansky: "Lehrbuch der pathologischen Anatomie," 1861, vol. iii.
4. Klebs: "Handbuch der pathologischen Anatomie," 1876.
5. Guelliot: "Des Vesicules séminales," Anatomie et pathologie, Paris, 1883.
6. Orth: "Lehrbuch der speziellen pathologischen Anatomie," 1893, vol. ii.
7. Posorisky: "Ueber heteroplastische Knochenbildung," Beit. z. path. Anat. und zur allg. Path. von Ziegler, vol. xxxvi.

CONCLUSIONS.

Here is a quite different form of calcification, not merely a retrogressive metamorphosis, but a calcification in connection with chronic inflammation. This case is related to the cases by different authors mentioned above. It is very likely that here was the effect of gonorrheal deferentitis. Simmonds[8] in his article on etiology of sterility mentions strictures of the vas deferens with a complete obliteration of the lumen. In my case there was no doubt the process of obliteration, which is analogous with so-called organization of the thrombi of the arteries. Here, also, the bone-like masses may not be considered a strange condition because everyone knows that ossification, relatively speaking, is a common consequence of calcification.

From a clinical standpoint calcification of these organs has no special significance, yet in some cases rectal examination may reveal presence of such a mass, which may easily be mistaken for stones or neoplasms in the bladder. From the theoretical point of view it is interesting.

RELATIONS OF THE SUPERIOR AND INFERIOR RECTI MUSCLES TO CONVERGENT SQUINT.*

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DENVER, COLO.

Since the last meeting of the Section on Ophthalmology of the American Medical Association I have had the opportunity of studying another case in which extended tenotomy for convergent strabismus was done five years ago. This case, which illustrates some of the points to which I wish to call attention at this time, is briefly as follows:

Patient.—Mrs. C., aged 51, has suffered from alternating convergent strabismus for many years, probably from childhood. She has irregular astigmia with low myopia.

R. 4/12 with $-1 = -0.25$ cy. ax. $90° = 4/9$, mostly.

L. 4/15 with $-1 = -0.75$ cy. ax. $165° = 4/9$.

The squint amounts to 35 or 40 centrads, and with prisms of this strength, base out, she obtains binocular single vision. Stronger prisms give crossed diplopia.

Operation.—June 17, 1901, under cocain, I stretched the right internus and nasal margins of the right superior and inferior recti; then divided the insertion of the internus and the nasal half of the insertions of the superior and inferior recti, in the manner described last year.[1] A good deal of convergence remained until the inferior tendon was cut. Then the eye became quite straight. The next day all dressings were omitted. This caused some dizziness and confusion so that she "wished to keep quiet." The eye seemed quite straight. There was no deviation or recovery under cover, when looking straight ahead, but movement of the right eye toward the left was markedly limited, and diplopia appeared when the object of fixation was carried from the right to the left field, or brought close to the eyes. Two days after the operation there was less confusion about walking and using both eyes, and few mistakes as to the position of objects. At the end of one week:

8. Simmonds: "Die Ursachen der Azoospermie:" Deuts. Archiv. f. klin. Med., vol. lxi.

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. THE JOURNAL A. M. A., Aug. 19, 1905, p. 522.

"Eyes feel more comfortable than before the operation; free from a strained feeling." There was now exophoria of 3 or 4 centrads, and inward movement of the right eye was still much impaired.

Result.—Feb. 10, 1905. She has not been wearing any glasses for nine months. Vision is: R. 4/12 mostly, L. 4/12, neither improved by glasses. The muscle tests show complete orthophoria at distance with exophoria, 8 centrads, at 12 inches. She is given R. and L. + 0.75 sph., with prism 1.5 centrads, base in, for near work.

The failures of ordinary tenotomy to cure strabismus have been sufficiently set forth and enlarged on, of late years, by a considerable number of ophthalmologists; but it may be mentioned that advancement also has its

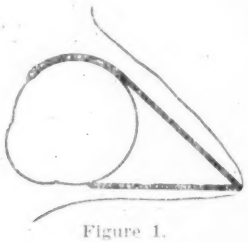

Figure 1.

failures, which have not been so much exploited. No one speaks of advancement as a discarded operation. We do not hasten to report failures when others are putting on record only successes; but it is not a sufficient recommendation for an operation that it does not leave the patient any worse off than he was before, however much of an improvement that may be over the earlier record of tenotomy. A careful consideration of the relative shares which the primary and secondary adductors and abductors of the eye take in its lateral movements will show some of the reasons for our failures and some of the special dangers of tenotomy.

With the eye in the primary position, contraction of the internus tends to adduct it. As this contraction increases, its influence over the position of the eye progressively diminishes. The shortening of the muscle renders its pull less powerful; the unrolling of its tendon, so that it no longer acts in a tangent to the globe, renders it less effective, and the elongation of its antagonist, bringing into play its elastic tension, and wrapping it around the globe, enables it to render more effective resistance. These conditions are represented in Figure 1, which shows the relations of the internus and externus to the globe during extreme adduction.

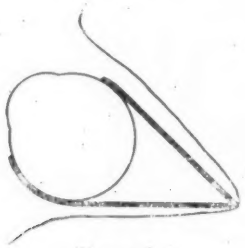

Figure 2.

In like manner, the contraction of the externus tends to abduct the eyeball with a power that progressively diminishes. The shortening of the muscle diminishes its tractive power, while the lengthening of the internus brings into action its elastic contractility and progressively increases the resistance that it offers to the externus. This may be understood by glancing at Figure 2, which represents the relations of the parts during extreme abduction of the eyeball. As either the externus or the internus draws the eye away from the primary position, its relative power over the position of the eye diminishes, while that of the opposing muscle increases. These muscles tend to a stable balance, with the eye near the primary position. So far as these two muscles are concerned, the eye drawn away from the primary position tends to return to it.

The reverse of this is true with the secondary adductors and abductors of the eyeball. These adductors, the superior rectus and inferior rectus acting together, apply their force to the eyeball in front of the center of rotation. When the eye is in the primary position, their power to rotate the eyeball inward is comparatively slight. When the eye is turned out so that the direction of the action of these muscles passes through

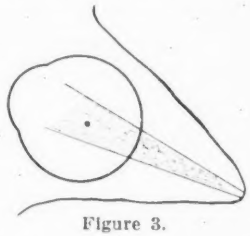

Figure 3.

the center of rotation of the eyeball, they have no tendency to turn it inward. Or, rather, the nasal portion of the muscle, tending to turn the eye in, is balanced by the temporal part of the muscle, tending to turn it out. This will be understood by Figure 3, in which the eye is represented as looked on from above, the position of the center of rotation being shown lying under the center of the superior rectus muscle. The muscle is on a "dead center" as regards lateral rotations.

When, however, the eye is strongly converged, the influence of the superior and inferior recti in turning the eye inward is as great or greater than that of the internus. This is shown in Figure 4, in which the muscles are represented by the single heavy line. With the rotation inward the insertions of the superior and inferior recti tendons are carried inward, the muscles depart farther and farther from the line of the "dead center," and at the maximum of convergence they exert their maximum influence toward turning the eye in or holding it there.

The physiologic purpose of this arrangement seems to be to render the eye movements easy and steady, up to near the limits of the field of fixation. The primary adductor, the internus, initiates the convergence movement. As this goes on and becomes more difficult, however, and the internus is placed more and more at a disadvantage, the secondary adductors come to its assistance and take up the greater part of the work. The more the eye converges, the more do the secondary or accessory adductors tend to make it converge and the more is the externus placed at a disadvantage in its efforts to overcome the convergence.

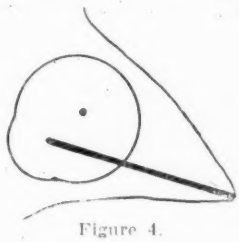

Figure 4.

It should be noted, also, that in overcoming extreme convergence the externus works alone. Of the secondary abductors, the obliques, it is true as of the secondary

adductors that the more the eye is turned in the direction that they act the more power they have to pull in that direction. But should the eye be converged so strongly as to place the secondary abductors on a "dead center," they have no power whatever of aiding abduction. In the mode of action of the secondary adductors and abductors we have the cause for the tendencies for squint to become constant, and for constant squint to become extreme.

In convergent squint, the abnormal contraction is quite as much in the nasal fibers of the superior and inferior recti as it is in the internus. No operative treatment of convergent squint can be regarded as rational which does not attempt to correct this essential abnormality. Simple tenotomy and advancement are radical only as concerns the internus and externus. As regards the more important factor, the contraction of the nasal portion of the superior and inferior recti, they have only a secondary influence through change of function.

From the early days of tenotomy the uncertainty of the result in any given case has been noted. In a large proportion of cases the squint, apparently corrected at the time, would recur; or later divergence would replace the convergence. It looked as if Nature, instead of helping to bring about the normal direction of the eyes, was determined to prevent it. This is explained by the tendency of the secondary adductors and abductors to turn the eyes even farther outward or inward. Simple tenotomy lessens the influence of the primary adductors and abductors; and to that extent abandons the eye to the influence of the secondary (or normally accessory) adductors and abductors. It lessens the influence of those forces which tend to come to equilibrium with the eyes in or near the primary position; and it increases the relative influence of those forces which tend to turn the eye away from the primary position. As compared with such an operation, advancement, which tends to increase the influence of the primary abductors and adductors, is decidedly more rational. If convergent strabismus is to be regarded as organic and attacked by operative procedures, it is proper to direct these procedures to the most serious alteration of structure, the contraction of the nasal margins of the superior and inferior recti. It would seem reasonable to divide these, even though the internus be left untouched, or only well stretched.

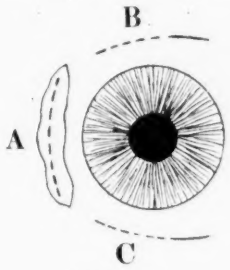

Figure 5.

The operation which undertakes to do this I described last year.[1] It may be understood from an inspection of Figure 5, in which the opening of the conjunctiva and the insertions of the internus are shown at A and the insertions of the inferior and superior recti at B and C. The portion of the tendon insertions to be divided are indicated by broken lines; the part of the insertions to be left standing, by solid lines. This operation is to be done only for high degrees of squint. For lower degrees the internus should be left uncut, or simply an advancement practiced. In very high degrees, as mentioned last year, the extended tenotomy may be combined with advancement.

In the case reported above, there was the very unusual combination of high comitant convergent squint of long standing, with capacity for full binocular vision. This capacity contributed to the perfection of the result. It may be noted, however, that there remains, with orthophoria for distance, exophoria of 8 centrads for near work. This is a condition found in many people who have reached this patient's period in life. But it is one that would be naturally connected with the conditions established by tenotomy of the accessory adductors. It is a lessened power to execute and sustain a high degree of convergence. The possibility of establishing this condition should be considered in planning such an operation; but such exophoria would be of no practical importance except in a patient gaining good binocular vision.

SUMMARY.

The case here reported illustrates the permanence of the results obtained by extended tenotomy. The primary adductor and abductor, the internus and externus tend to equilibrium with the eye directed forward. The secondary adductors (the superior and inferior recti) and the secondary abductors (the obliques) tend to turn the eye ever more strongly in or out. A rational operation to correct excessive convergence must tend to lessen the relative influence of the secondary adductors.

DISCUSSION.

DR. FRANCIS VALK, New York, said that the question some one has asked as to whether or not we operate on the muscles of the eye unless the muscles cause the squint, leads us to the supposition that in these patients operated on the muscles of the eye cause the squint. He thinks that if the physician had examined the cases, not as ones of squint, but according to the rotation of the eyes in the sockets, he would have found that the outward rotation was much less than the inward. If that is true, then the essential cause of the squint is that the external rectus is too weak. Dr. Valk thinks that attention should first be given to the weaker muscles, and that statistics will prove that thousands of eyes have been operated on without regard to the power of the superior and inferior recti muscles to turn the eye in. He does not believe that Nature ever placed a muscle in the human economy to perform two or three different functions. He believes that the superior muscle is to turn the eye upward and not to have part of the muscle turn the eye one way and part another, and he thinks that the same thing applies to the oblique. He does not believe that these muscles have anything to do with turning the eye around its center of rotation. If the cases of squint be studied on that simple principle he thinks that the operations will be very much better than when a strong muscle is cut and its power destroyed before the weaker one is strengthened. One should strengthen the externus in cases of squint and give it the power of turning the eye. What, he asked, is going to be the future of these cases of squint on which we are so freely operating by tenotomy? When these children grow up and begin to take up their lessons in school, will they not suffer from exophoria? He mentioned a case he saw recently of a young girl at school; she had had an operation in just that way and it had so weakened the muscle that when she came to study she could not use it and another operation had to be done to give her sufficient power of convergence.

DR. G. C. SAVAGE, Nashville, said that we should never forget that there are two purposes in view in operations on the muscles: one to increase or lessen the tonicity of the muscle and the other to change the plans of its action. The latter purpose is intended only when there is torsioning tendency of the eyes. If the vertical axes are parallel with the median plane of the head, the marginal fibers should not be cut, because this

would change the plane of rotation. Of course, the operation for altering the tension is a very different thing and a very simple thing compared with changing the plane of rotation. Dr. Jackson has not gotten into serious trouble in his marginal tenotomies, for the reason that he has operated on the nasal fibers of both superior and inferior recti. Cutting the nasal fibers of the superior rectus allows the eye to be turned in; cutting those of the inferior rectus turns the eye out. If the vertical axes are parallel with the median plane of the head in the beginning, the two new forces acting in opposite directions, if equal, do not cause any torsion. Dr. Jackson may have erred in dividing the nasal fibers in this case, but if he did it was not in that he produced torsioning, because he had operated in the same direction equally on both muscles; but Dr. Jackson and every one, he said, should take into consideration the tonicity of a muscle before operating on it. If a muscle has its normal tonicity, then it should not be weakened nor strengthened. If it is subnormal it should not be weakened, if supernormal it should be. Dr. Jackson has placed before us a dangerous precedent. All men can not divide the nasal fibers of these muscles equally, nor should they always be so divided. Dr. Savage has often operated in this way, but with the view of lessening tonicity and of overcoming cyclophoria. Whenever he has operated on the inferior rectus in this way it was to divide the temporal fibers with the purpose of correcting a plus cyclophoria, and whenever he has operated on the superior rectus muscle he has divided the nasal fibers and not the temporal, to correct a plus cyclophoria. In the one instance there was a complicating cataphoria, while in the other there was a complicating hyperphoria.

Dr. Mark D. Stevenson, Akron, Ohio, said that the internal rectus is wisely attached further forward on the globe than any of the other muscles. The obliques also take some part in slowing off the movement of the eye in adduction. Probably these provisions are chiefly to protect the delicate contents of the globe and not so much simply to call the secondary ductors into use. Every one of the recti muscles in different positions of the globe may assist in turning the eyeball in a vertical and lateral direction as well as in torting it. In forced convergence the temporal side of the superior and inferior recti, being furthest forward, in strong adduction will be in the best position to adduct the eye, and will be on a greater tension than the nasal side, although the temporal side is nearer the center of rotation. If the temporal side of the muscle is undisturbed and the nasal cut, the muscle would be on as great tension in forced adduction as before. If the whole muscle were cut it would require advancement to prevent vertical trouble. It seems unlikely that the nasal side of the muscle should contract without a corresponding contraction of its temporal side. He asked: In muscles that are not too strong, is it wise to divide not only the primary adductors but also the secondary ones? In any complete tenotomy the following changes take place: 1. The tendinous insertion of the muscle is set back. 2. This lessens the degree in which the muscle wraps around the globe, so that the posterior portion of the muscle can not be a tangent to the surface of the eyeball after as free rotation as formerly. 3. The length of the muscle which has to do with speed and power is diminished. 4. The outer limb of the Y-shaped check ligament comes more quickly into action to prevent further rotation. 5. The eyeball is permitted to roll slightly toward its weak antagonist, further weakening it. 6. Proportional torsion may be interefered with.

Dr. Frank Todd, Minneapolis, said that there might be certain cases in which this operation would be justified: for example, those cases in which measurements showed an excess of rotation inward and no defective rotation outward. If you found defective rotation outward and excessive rotation inward, then you would require not only tenotomy, but also advancement. In his experience, when he has found that sufficient effect could not be secured by doing a tenotomy of the strong muscle it is because the opposing muscle is too weak, and, therefore, a shortening operation is necessary. The only cases, therefore, in which this would be indicated would be those in which tenotomy of a too strong internus did not secure enough effect, and the external rectus had its full strength. He asked Dr. Jackson what he considers the indication for performing this operation.

Dr. John E. Weeks, New York, declared that he had no fault to find with the theory of the action of these muscles, as Dr. Jackson expresses it, but he protested against the operative procedure Dr. Jackson employed in correcting the defect. It not only weakens the internus and the secondary adductors, but also the externus, and there is bound to be an insufficiency of adduction. Dr. Weeks said that we should not only determine the actual strength of the internus, but the actual strength of the externus, and that can not be done by prisms. We must use the perimeter or some such instrument. He thinks that it is a dangerous thing to advocate, from such an authority, an operation that is so potent for evil. An advancement of the externus with modified weakening of the adductor, in his opinion, would give good and safe results. If we make such a very extensive weakening of the adductors we are bound to get the patient into trouble.

Dr. F. S. de Lue, Boston, agreed with Dr. Jackson that the more the internus contracts the more its influence over the position of the eye diminishes, and we find that its action is limited by its contraction and by the tissues limiting its motion. It seems to Dr. de Lue that there has been altogether too much cutting of these muscles. He believes that if we would examine the cases more with instruments and depend less on prisms we would determine more accurately the degree of improvement by treatment and would find as we progressively strengthened the muscles that we would have to do less cutting. When we find one muscle pulling more strongly than it should, there is a cause of stimulation which we have not discovered. There are reasons why weak muscles should be strengthened, and there is a way to strengthen them. Stretching of these ligaments may be a causative factor. If we have a patient with pain in the back we do not think of cutting the muscles, but endeavor to produce rest of the muscles by certain adjustments. Relief from overstimulation is needed; temporary support of the muscles. At first Dr. de Lue was inclined to operate extensively, but his first cases set him right. One may, of course, carry this too far and refuse to operate in cases in which it is absolutely necessary.

Dr. Myles Standish, Boston, said that as a practical method of correcting this condition he thinks Dr. Jackson's is entirely correct. Dr. Standish has done similar operations with entire success, and in analogous conditions he has done so-called graduated tenotomy, in which he has cut the tendon of the internus, for instance, completely at one edge and left the other edge intact. He has done this with great satisfaction to himself and with subsequent comfort to his patient. He believes that when they have learned the proper technic, many ophthalmologists will use this operation in certain cases as are found by experience to be suitable for the operation.

Dr. Edward Jackson, Denver, said that it is obviously impossible to discuss all the points that have been raised in the short time allotted. When he places his arm horizontally forward it is kept so by the deltoid; when he puts it horizontally backward it is kept there by the deltoid. Some of the fibers of the deltoid pull it back, some forward; many of them, as the position changes, change their function. The muscles around the hip act in the same way. Any change of the relations of origin and insertion changes the function of a muscle. There can be no doubt of this, and the better discussions of late years regarding the ocular muscles recognize it. The coördination of muscular action by which any movement of the eye is brought about is more complex than pulling a string and setting a single muscle in operation. Dr. Jackson can not conceive how any ophthalmologist can analyze a case of paralytic squint and not recognize that muscles can change their function, and how in many cases comfort is obtained by the taking up of the function of one muscle by another. In an old case of paralytic squint it is often very difficult to determine which muscle was originally affected.

He operates in very few cases of squint. He believes that 60 or 70 per cent. of patients can be cured without operation. If one uses persistent efforts toward a cure without operation there are very few patients left to operate on. This particular operation he never thinks of doing except in extreme cases of squint. He does advancement more frequently than this operation, but advancement is not satisfactory in all cases. This operation is one that is not necessarily followed by lessened

power of adduction. He has seen the power to change laterally the position of the eyeball doubled. Not only was the eye turned out, but the power of turning it in from that new position was increased. Theory leaves something out when it assumes that a tenotomy necessarily leaves the affected muscle with less effective power over the movements of the eyeball.

DEVELOPMENT OF THE URACHUS.*

J. F. BINNIE, M.D.

KANSAS CITY.

Early in intrauterine life, the allantois is given off from the posterior end of the primitive intestine; its walls are composed of entoderm and mesoderm provided by the hind end of the primitive groove posterior to the anal membrane. The anal membrane consists of ectoderm and entoderm, i. e., it has no mesodermic tissue. As the anal membrane becomes curled forward to form in conjunction with the lateral infoldings of the embryo the hypogastrium and to contract the umbilical opening, the junction of the intra-embryonal and extra-embryonal portions of the allantois is contracted. A spur of tissue exists between the allantois and the yolk sac or umbilical vesicle. This spur increases and grows backwards through the primitive intestine until it divides the primitive gut into an upper part (intestine) and a lower part, continuous with the allantois, which forms the urinary bladder. Thus the walls of the bladder are formed, dorsally by the above mentioned spur, ventrally by the anal membrane which also aids in forming the hypogastrium. As the anal membrane is the extreme posterior part of the primitive line (Keibel) and as fissures are common in this line, it is not surprising that occasionally a permanent fissure persists and gives rise to exstrophy.

About the second month of life, the urinary bladder becomes distinct, the remnant of the allantois between the bladder and the umbilicus contracts, but is still tubular and is now known as the urachus. Between the fourth and fifth months, the urachus normally loses its lumen and becomes a solid cord.

Early in their development, the urinary bladder and the urachus are completely surrounded by peritoneum, except on their ventral surface where a meson (mesocyst) exists. This disposition usually disappears and the urachus becomes extraperitoneal. That the mesocyst sometimes persists was well exemplified in an adult cadaver examined for me in which the urachus did not lie close to the abdominal wall, but lay between loops of small intestine. The persistence of the meson explains the occurrence of some otherwise puzzling intra-abdominal cysts. Mr. Clendening recently examined for me sixteen adult cadavers and seven fetuses, with the following results:

1. In seven adults and six fetuses, the bladder showed a distinct diverticulum from 1 to 2 cm. deep, at the fundus, where the urachus is attached.

2. In one adult there was a slight projection instead of a diverticulum.

3. In eight adults and in one fetus, the dome of the bladder was smooth.

4. In none of the cases were there found lacunæ lined with epithelium in the urachus.

5. The average adult urachus was 12 cm. long by 1.5 cm. wide.

6. The urachus was usually adherent to the belly wall but in one case (diabetic with frequent retention of urine) it was not close to the parietes but lay between loops of small intestines.

7. In all the cases the urachus was well supplied with vessels.

The urachus is like the thyroglossal duct and the branchial clefts in that it may remain patent, in whole or in part, and it may be subject to various diseases. The fistula resulting from urachal patency may be complete, blind internal, blind external or blind, i. e., closed both at its vesicular and umbilical ends. As in the case in the neck, a blind urachal fistula may become complete through the bursting open of the closed end of one of the blind varieties.

CASES REPORTED.

Tully Vaughan[1] collected reports of forty-six complete, four blind internal and three blind external fistulæ. To these may be added the following cases: J. D. Griffith, in a girl of fifteen years (whose brother was the subject of cleft palate) split, cauterized and packed the fistula with a perfect result. In this case, the mother reported that there had been more or less umbilical discharge from the time the cord separated.

E. G. Marks observed a urachal fistula in a man of about 28 years. The fistula is sometimes open and sometimes closed; it never causes any particular suffering and is only occasionally annoying.

In 1905, I saw a woman of 29, who for six years suffered from cystitis of unknown origin. All her life she had been subject to pain and tenderness in the hypogastrium. There was a line of induration between the bladder and the umbilicus, and pus escaped from the umbilicus. On examination I found a little mass of granulative tissue at the umbilicus and through this could pass a probe into the bladder. I excised the fistula which was so closely attached to the peritoneum that the belly had to be opened. The fistula led into a small diverticulum at the fundus of the bladder. Histologically, the walls of the passage consisted of very vascular granulation tissue and sclerosed tissue. The lumen was lined by necrotic material. There was no epithelial lining to the sinus.

In Tully Vaughan's list, a number of more or less similar cases are reported where after cystitis, or after some obstruction of the ureter, an abscess formed and discharged through the umbilicus, thus transforming a blind internal into a complete fistula. In my case, there was a distinct vesical diverticulum penetrating the urachus for a short distance. Another case which I treated in a boy of nine years, may possibly have been dependent on an infection of the urachus. There was a tender, hard tumor, five inches in width, extending in the middle line from the umbilicus to the pubis. Pus escaped from the umbilicus. A probe introduced at the umbilicus passed toward the fundus of the bladder for a distance of four inches. This sinus was situated between the peritoneum and the muscular wall of the belly. An abscess was present, superficial to the musculature, with an opening through which it communicated with the deep sinus. Free drainage and curettement led to a cure.

In a number of reported cases, urine was voided by the umbilicus and urinary calculi have formed in the patent urachus. Treves removed a stone from the urinary bladder through an umbilical (urachal) fistula.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Trans. Amer. Surg. Assoc., 1905.

CYSTS OF THE URACHUS.

Delore and Cotte[2] write: "Small cysts of the urachus are sufficiently common. First noted by Luschka, in 1862, they were minutely described by Wutz, in 1883; in seventy-four cadavers examined, this author found them twenty-four times. Numerous operators have remarked their presence in the course of laparotomies and Morestin has recently shown some fine samples to the anatomic society of Paris. Large cysts, on the contrary, are so rare that until recently their existence was doubted." Wutz only knew of one certain case in man.

Poncet, in 1905, (Delore and Cotte) operated on a woman of 20, who was supposed to have tuberculous peritonitis. He found an enormous cyst containing from 8 to 10 liters of a brown, blood-stained fluid with much clotted fibrin. The cyst filled the abdominal cavity and was not connected with the intra-abdominal organs except that it was inserted into the summit of the bladder, subperitoneally, at the point of origin of the urachus. It was also attached to the umbilicus. Subsequent examination showed the cyst completely invested by peritoneum (see anatomic remarks at beginning of paper) except at its pedicle. "From the pedicle of the tumor a hard cord passed up on its anterior surface to the level of the umbilicus, where it lost itself in the tumor and in the abdominal wall. This cord, probably a remnant of the urachus, was in the middle portion completely intraperitoneal."

In Poncet's case there was no epithelium lining the cyst, the walls of which consisted principally of mucoid tissue and non-striated muscle fiber.

Kronlein operated on a woman with a large epithelial-lined cyst situated between the peritoneum and the parietes, which had evidently originated from the urachus.

A patient operated on by Roser presented a cyst-like tumor, which at first glance seems to resemble Kronlein's; but a communication existed between the cyst and the bladder, so that the lesion must be considered a dilated, blind internal fistula. Patel observed an almost identical case in a child of five years of age.

Trendelenburg's case, as reported by Delore and Cotte, is difficult to classify. These authors seem to consider it one of urachal cyst. The patient was a polyuric, aged 66, with an enlarged prostate. Six months before, there had appeared a suprapubic tumor which was painful for three or four days and then opened spontaneously and discharged purulent liquid. On admission to hospital, there was noted a hypogastric tumor the size of an adult head, reaching from the pubis to the umbilicus. A fine probe could be passed into a fistula at the umbilicus from which a cloudy, purulent fluid constantly escaped. When the bladder was emptied by the catheter, the tumor diminished in size. On incision, the tumor was found to contain a mixture of pus and urine. The cavity of the tumor was lined with stratified, flat epithelium like that of the bladder. Was this case a true cyst of the urachus which became inflamed and opened into the bladder; or, was it a dilated, blind, internal fistula?

Freer,[3] and a number of other surgeons, have reported cases which are evidently examples of true urachal cysts.

The following is an example of another class of cases sometimes regarded as urachal in origin. A woman of 24, presented a hard inflammatory mass completely filling the pelvis and the lower segment of the abdomen. The symptoms were so pressing that I was compelled to operate under most unfavorable circumstances in the country—median, hypogastric incision. The peritoneum was not distinguished. I penetrated an abscess whose walls were at least one inch thick and necrotic and which contained much pus. The finger in the cavity reached nearly to the vagina on the right side and to the brim of the true pelvis on the left. Uterus, intestines, etc., could neither be seen nor felt. The patient recovered after long continued drainage. No histologic examination was made of the abscess wall.

F. B. Robinson[4] reports a number of cases operated on by Lawson Tait and pronounced to be cysts of the urachus. On median incision, no peritoneum was seen; but in its place there was a dark red tissue having an inflammatory appearance. This tissue (cyst wall) was as thick as sole leather, brittle, gelatinous and could not be separated from its bed. The cyst cavity contained a thick pultaceous substance with much flaky flocculent lymph shreds and jelly-like masses. The cyst walls did not collapse but lined the abdominal and pelvic walls. The intestines were invisible. The uterus was fixed against the pubes. The tubes, as large as a thumb, stretched like guy ropes outward to the pelvic wall. The cyst wall was wrapped around the tubes like a meso-salpinx and covered the tubercles.

This brief synopsis of one of the Tait and Robinson cases is characteristic of the others reported and corresponds fairly closely to the one I have described. It seems to me that there is no good ground for considering them other than samples of encysted peritonitis, some of them at least, being of tuberculous origin.

2. Rev. de Chir., 1906, No. 3.
3. Annals of Surgery, 1887.

Clinical Notes, New Instruments, Etc.

A CONTRIBUTION TO THE STUDY OF QUININ AND IRON IN PNEUMONIA.

E. L. MOODIE, M.D.
CHATHAM, OHIO.

History.—Miss C., aged 54, rather a frail little woman of about five feet four inches in height and ninety pounds weight, gave a history of an attack of pneumonia four years previously. Otherwise her family and personal history were good. I was called early in the morning of April 6 and found her suffering from pain in the left axillary line, low down, dyspnea and general soreness, with headache and vomiting. Temperature 104 F., pulse 108 (very full), respirations 30. Over the whole lower lobe of the left lung harsh tubular breathing was heard, with fine crepitant râles, and there was marked dullness on percussion with increased tactile fremitus.

Diagnosis.—Lobar pneumonia of left lower lobe.

Treatment.—I commenced with the usual expectant remedies (not having quinin in sufficient quantities with me), and, on returning about 4 p. m., found absolutely no change except in the respiration, which was 32 per minute, and bloody expectoration. Quinin sulph., gr. xl, were given, and gr. x ordered every three hours, with tr. ferri chlor., m. x, every three hours. Next morning I found the temperature normal, pulse 88, respiration 18. Quinin was discontinued, iron continued.

That evening the temperature again rose to 104 F., pulse 100, respiration 28. Quinin was again given in gr. x doses every three hours, as she seemed unable to retain a larger dose.

4. Annals of Surgery, 1891, p. 337.

The morning and evening record may be stated as follows:

Day.	T. (F.)	P.	R.	
3 a. m.	101.4	92	24	Quinin and iron given.
p. m.	101.8	98	25	Quinin and iron continued. Complaint of nausea.
4 a. m.	101.4	100	24	Expectoration less. Quinin withdrawn. Iron continued.
p. m.	102	108	26	Quinin repeated, gr. xl, followed by gr. xxx in one hour. Iron continued. M. x every three hours.
5 a. m.	99	100	27	Quinin and iron both discontinued, owing to irritability of the stomach. Patient was not seen in the evening.
6 a. m.	100	96	17	Feeling better. No medicine given.
p. m.	99.4	100	16	Strych. gr. 1/60 every three hours while awake. Practically no expectoration.
7 a. m.	98.6	98	17	Strych. gr. 1/60 t. l. d. with tr. nux et gent, āā M. v. before each meal. Breathing regular and painless. No adventitious sounds and only slight mucous expectoration. No dullness on percussion.

The temperature, pulse and respiration have remained normal, and the patient feels well, though weak. (Eighth day.)

I might add that I did not give such large doses as suggested by Dr. Galbraith, owing to a very irritable stomach. She complained a good deal of tinnitus, but not after quinin was withdrawn.

I would like to ask if people in the southern states are more tolerant of quinin, or if this patient would probably have retained a larger initial dose better than the smaller, and if the effect would have been more permanent.

AN IMPROVED RECTAL OPERATING TABLE.

W. I. LEFEVRE, M.D.

CLEVELAND, OHIO.

Since publishing a description of my table in the *Medical Record* several years ago the table has been remodeled and improved as shown in the following illustrations: Figure 1 shows a front view of the table. Figure 2 shows a back view with the side shelf folded down and the leg rests up in position. The leg rests are adjustable as to height, the padded pieces being hinged on the round supports so that they automatically adjust themselves to the leg, thus assuring a comfortable position. At the same time the buttocks are brought

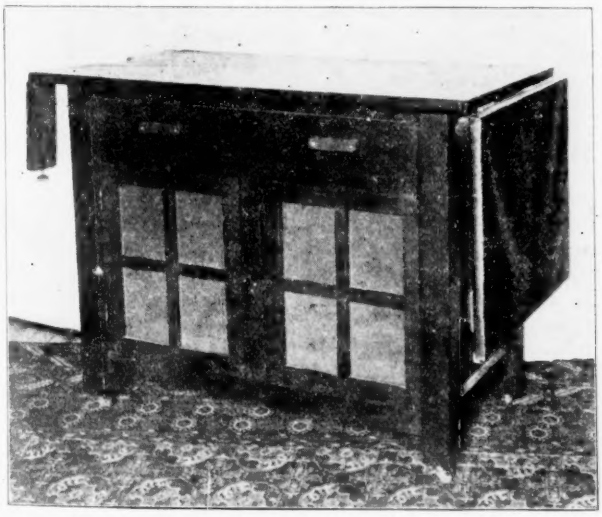


Figure 1.

to the end of the table, making the parts easy of access for the operator. When the side shelf is adjusted and locked in position, as shown in Figure 3, and the top tipped to an angle of 90 degrees, the patient is then in position for a proctoscopic examination. With the patient in the Sims position the side shelf can be adjusted and a practically knee-chest position secured, with little or no discomfort to the patient. This is particularly desirable when examining a woman.

While the table is designed especially for rectal work, it is suitable for all ordinary office examinations.

708-712 Rose Building.

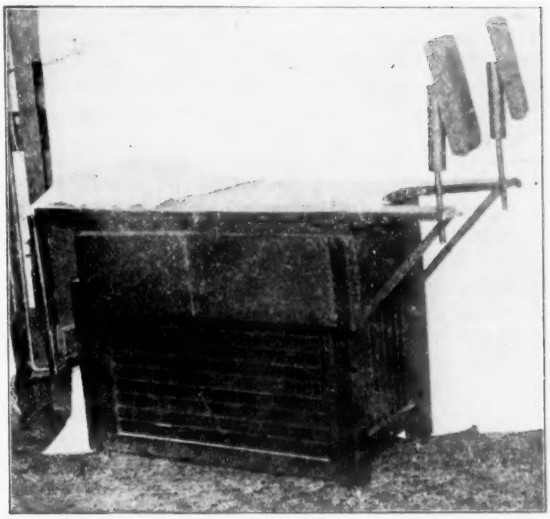


Figure 2.

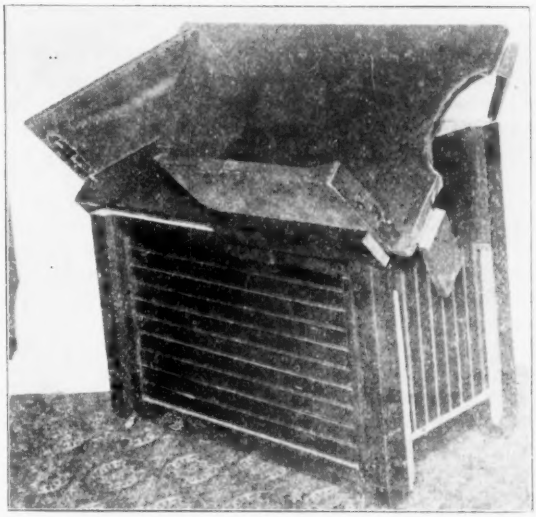


Figure 3.

LOCATING FISTULÆ IN THE LOWER INTESTINAL TRACT BY INJECTING HYDROGEN DIOXID THROUGH THE ANUS.*

H. A. ROYSTER, A.B., M.D.

Professor of Gynecology and Dean of the Faculty, Medical Department of the University of North Carolina; Gynecologist to Rex Hospital; Surgeon-in-Chief to St. Agnes' Hospital; Surgeon to the Southern Railway.

RALEIGH, N. C.

It occasionally happens that in operating for the closure of a fecal fistula the surgeon encounters much difficulty, or even failure, in finding the aperture in the bowel. Especially is this likely to occur when the field of operation is a network of adhesions and the intestinal opening is obscured by blood. To illustrate such a difficulty and to suggest, if possible, a way out of it, I report the following case, in which the technic, so far as known, was original.

Patient.—In 1903, Miss J., aged 22, had a hysterectomy performed. During this operation the sigmoid flexure was injured, and, though the abdominal wound apparently healed, after a

* Read by invitation before the South Carolina Medical Association, Columbia, April 18, 1906.

year there appeared a small opening in the lower end through which was discharged pus and fecal matter. This persisted for several months, with no tendency to close under the usual methods of treatment. In the latter part of 1904, I was called to see patient in consultation. At this time she was bed-ridden, emaciated, anæmic and required rather large doses of morphin to relieve what seemed to be severe pain. A fistulous tract led from the lowest part of the abdominal incision backward, downward and toward the left to a depth of six or seven inches, and according to the patient and her attendants, pus was now and then discharged through the rectum.

Operation.—Jan. 28, 1905, I opened her abdomen in the median line and followed the sinus down to a dense mass of adhesions, which it was impossible to separate without doing damage to the local parts or perilously prolonging an operation on a patient already exhausted. A cigarette drain was introduced and the wound closed around it.

Postoperative History.—At first some hope was entertained that this procedure would have favorable result; but after some weeks the sinus broke down and the fistula again began to discharge. For the next few months the patient was given most careful attention. Her wound was dressed frequently, the diet regulated, tonics administered; in short, everything was done to bring up her nutrition to the standard, with the result that after six months she was in first-rate condition, ready and willing to undergo another operation.

Second Operation.—Accordingly, on Aug. 16, 1905, she was etherized and the abdomen opened. This time I made an incision, much longer than the former one, at the outer border of the left rectus, instead of through the linea alba, thereby obtaining a better view of the structures to be operated on. Disregarding the old sinus, a line of cleavage was made through the adhesions down on the sigmoid flexure, exposing it clearly for some distance above and below the point where the fistula was supposed to be. Oozing from the torn tissues was annoying, but not excessive. All attempts to find the hole in the bowel were at first futile. There was reason to believe it was present; gas could be heard to escape through it and the fecal odor was unmistakable, but it could not be seen. Finally, with the abdomen still open and the affected area in sight, I suddenly thought of the following plan, which was successfully accomplished: I had the nurse pass a long soft rubber catheter into the rectum from below and inject through it one ounce of hydrogen dioxid. As soon as this substance came to the opening in the sigmoid there was an effervescence, plainly discernible, definitely indicating the fistula, the edges of which were immediately grasped with forceps. A purse-string suture of fine silk was placed around the opening, and over this two rows of Lembert sutures, also silk, were applied, the first interrupted and the second continuous. The external incision was closed except for a very thin gauze tape about its middle. The patient's recovery, otherwise uneventful, was complicated by an acute pyelitis on the twelfth day, which threatened to become of serious import. Discussion of the cause of this infection would be interesting, but out of place.

Result.—The patient is now entirely well, having gained steadily in weight since two months after the operation.

From the evidence at hand, there is no recorded case in which the exact method employed by me has been used. A painstaking search of the literature on the subject of fecal fistula in the lower bowel reveals but one instance of even a like character. In 1894, Nicholas Senn[1] described a very similar operation. His patient was a young woman, 25 years old, who dated her trouble from childbirth, five years and a half before. An abscess had formed in the left ischiorectal space three years afterward.

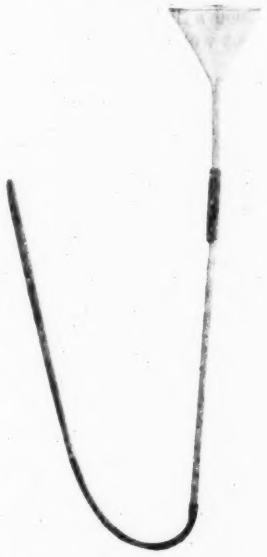
There was an opening in the gluteal region two inches from the anus and a second opening, which appeared six months later than the first, in the left inguinal region. The patient was brought into Senn's clinic as a case of intestinal fistula. Before the operation, dioxid of hydrogen was injected through the inguinal fistula and was followed immediately by the escape of white foam from an opening in the rectum, which could be plainly seen through a rectal speculum. The same phenomenon was observed after a similar injection into the gluteal opening, showing that both abscess cavities communicated with the same intestinal fistula. A satisfactory operation was performed through the abdomen.

1. Amer. Jour. of Obstetrics, vol. xxx, p. 335.

THE SIMPLEST, EASIEST AND BEST METHOD OF IRRIGATING THE BLADDER.

J. D. SOUTHARD, M.D.
Surgeon to Belle Point Hospital.
FORT SMITH, ARK.

Insert one end of a glass pipette into the open end of a soft rubber catheter, over the other end of the pipette slip a piece of rubber tubing. Prepare the irrigating solution in a graduate of proper size. Introduce the catheter and allow the bladder contents to flow out into a convenient vessel; grasp the rubber tubing with left thumb and index finger just as the flow ceases and press it firmly together, thus preventing the entrance of air into the bladder. While thus holding the tube insert into it the stem of a glass funnel and elevate it over the abdomen; at the same time, with the right hand, begin pouring the solution into the funnel, being careful to keep enough in the funnel to prevent the entrance of air. When the desired quantity has been introduced, press the rubber tube again, lower the funnel and allow the bladder contents again to pass into the vessel. Repeat the operation as often as desired, finally withdrawing the catheter and permitting the last portion to be passed by the patient through the urethra, if desirable.



The graduate affords a simple and accurate means of preparing the solution to be used, and at a glance at any time tells just how much has been introduced.

The solution flows into the bladder in a gentle continuous stream. The apparatus is simplicity itself, easily sterilized and always ready. I believe a trial of it and comparison with other methods will sustain my claim, that it is the simplest, easiest and best.

101 North Sixth Street.

ATTACKS OF HYSTERICAL APHONIA OCCURRING IN A PATIENT SUBJECT TO TYPICAL EPILEPTIC SEIZURES.

THEODORE DILLER, M.D.
PITTSBURG.

Patient.—An unmarried woman, aged 26, clerk in postoffice, family history negative.

History.—Since August, 1901, she has been subject to attacks of epilepsy of the ordinary type which at first occurred about once in three months but which have occurred once or twice a month during the past year.

Besides these epileptic fits, the patient has been subject for 3 or 4 years past to frequent attacks of mutism and to attacks consisting of confusion of speech. The last named are often preceded by the first named, i. e., an attack of mutism is often

preceded by a period of confused speech. These attacks are of much more frequent occurrence than are the epileptic fits. They are the cause of great embarrassment to the patient since she may in a street car or a store or in company suddenly find herself mute and unable to reply to questions. These attacks last from a few minutes to several hours, and are never associated with convulsive movements or loss of consciousness. The power of speech is always restored suddenly. On the occasion of one of her visits to my office while questioning her regarding these attacks of mutism, the patient suddenly began to talk in a jargon in a low tone of voice; and a minute later was mute. I afterward learned that she so continued for eight hours when speech returned suddenly. There was no loss of consciousness. The patient evidently understood what was said to her as she obeyed commands of various sorts. In response to my request to set down on paper her state of feeling, she wrote as follows:

"I feel all right. My tongue is thick. I understand everything you say to me. I don't know why I can't talk."

She protruded her tongue only partially in response to my request. It rolled in her mouth as though helpless and partially paralyzed. The muscles of the soft palate moved very sluggishly in an attempt to say, "Ah." Dr. Robert Millikin examined the larynx, but could discover nothing abnormal. The patient's mother who was present at the time informed me that the attack I was witnessing was a typical one.

The patient had been subject to headaches nearly all her life and since the age of eight had worn glasses.

Examination.—Sept. 9, 1904; weight, 122; general appearance good. The patient is intelligent and of cheerful disposition. Pupils measured 5 mm. each, and react to light and to accommodation promptly; the eye-grounds were normal; knee-jerks were normal. An examination of the pelvic organs by a well-known gynecologist showed them to be normal. No sensory changes were discovered. Urine was normal.

Eyes.—Dr. Lippincott examined the patient's eyes and on November 15, reported the following:

"She had some hypermetropia and also some hyperphoria for distance. The ophthalmoscope examination revealed nothing abnormal. The vision, however, is not quite up to the standard but this might be a congenital defect. In prescribing glasses we took note of the hyperphoria and we think that whatever benefit she will receive from the glasses can be furnished her in that way. The glasses we prescribed were as follows: R. E. + .62; L. E. + .62. The right lens decentered upward 2 mm. and the left downward 2 mm. The decentering gives the necessary prismatic help."

Remarks.—The only point of significance in the history is that the patient has had a love affair for several years past, and has hesitated to get married because of the fits from which she suffers.

Although the sensory stigmata of the disease are absent, the character of the mute spells is such that I believe they must be regarded as hysterical in character.

If this be true, then the patient presents manifestations of epilepsy and hysteria quite distinct and apart from each other. The case could not be called one of hysteroepilepsy in the sense in which it was used many years ago to indicate that attacks partook both of the nature of the epilepsy and of hysteria.

Cases such as I have described are, if one may judge by the literature, of rare occurrence.

In the last two numbers of the *Jahresbericht uber Neurolog. und Psychiat.* I note only a few instances recorded:

Nonne[1] records the case of a man who, after a severe trauma to the head, suffered from epileptic attacks, and later from left hemiplegia, which was cured by a trephine operation, although nothing was found at the operation; the symptoms returned. A second trephine operation was performed. Hysterical convulsions then appeared with hemianesthesia. A third trephining operation was performed, which cured the hysterical manifestations. The patient then worked three months, after which he again exhibited hysterical convulsions and anesthesia, together with the epileptic manifestations.

Mutterer[2] mentions a case in which epileptic and hysterical symptoms were manifested in a typical manner.

Herman[3] reports two cases of epilepsy, in which hysterical phenomena appeared late in the course of the disease—after twenty and eighteen years, respectively. In the first case the hysterical symptoms were contractures, aphasia and analgesia, and in the second case mutism, globus, claustrophobia, etc.

In the latest complete work on epilepsy—that of Spratling—I can find no reference to the subject of epilepsy as a complication of hysteria.

1. Abst. in Jahresbericht Neurol. u. Psychiat., vol. vii, p. 699.

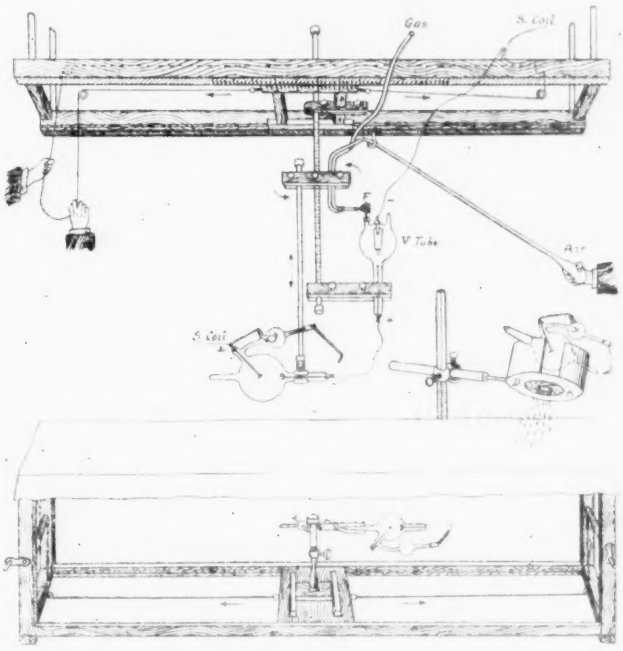
2. Archiv de Neurol., vol. xiii, p. 353.

3. Jahresbericht Neurol. u. Psychiat., vol. v, p. 596.

A NEW SKIAGRAPHIC TABLE AND TUBE HOLDER.

M. K. KASSABIAN, M.D.
PHILADELPHIA.

This tube holder consists of a frame suspended from the ceiling. By this arrangement the undesirable vibrations caused either by the patient or the operator are prevented. The patient can get on the table easily. The tube holder slides to and fro to any part of the table, and also is capable of lateral movements, this being accomplished by the operator pulling on a cord as is seen in the illustration. Likewise the tube holder can be made to approach or to recede from the operator, and at the same time is capable of up and down and a rotary move-



ment. The tube holder is scaled in centimeters and inches, as is also the frame. A ventral tube is attached in series with the Crookes' tube. When the skiagrapher desires to lower the vacuum in the ventral tube he compresses a bulb at a distance from the tube, which forces a flame into the platinum osmoregulator.

The table is so constructed that it allows of the placing of the tube under the table and by working a crank the operator permits the tube to move to and fro. On the left of the illustration is seen the opaque glass shield encasing the Crookes' tube, which allows the passage of the rays through the iris-diaphragm for therapeutic uses. This table has been successfully employed by me for several years in the Philadelphia Hospital.

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SATURDAY, JULY 14, 1906.

MENINGOCOCCUS INFECTIONS.

By the application of cultural methods to the study of various infectious diseases it has been shown that, instead of being more or less localized infectious processes, certain such diseases are in reality bacteriemias associated with localized lesions. Whether the visceral lesions are primary with invasion of the blood as a secondary process or whether the visceral lesions are secondary to a primary blood infection is not an easy problem to decide; but both of these conditions seem possible. Pneumonia and typhoid fever have been studied from this point of view and may be cited as typical examples of what is in mind.

As cerebrospinal meningitis is subjected to more careful analysis bacteriologically, it appears that this disease also may be found to correspond to typhoid fever and pneumonia in respect to localization and blood invasion. Recent work indicates that the meningococcus invades the blood in a considerable portion of cases. Elsner obtained it in about 25 per cent. of the cases during life, and probably with more frequent examinations it may be found in a still higher percentage. Other evidence of the general invasion of the body by this organism is the frequent localization of meningococci in such localities as the pericardium and the serous surfaces of various joints. There is, therefore, abundant evidence to indicate that meningococcus septicemia accompanies meningitis in a considerable number of cases. On the other hand, pure meningococcus septicemia with no definite localization or localization in parts of the body other than the meninges is apparently very rare. Such cases have been reported, however, by Warfield and Walker, Salomon, Schottmüller and others. The criticism has been, justly perhaps in some instances, that the meningococcus has been confused with other closely related cocci, especially those of the *Micrococcus catarrhalis* group, which are frequently found on the normal and infected respiratory mucosa. While this may apply in some cases, the evidence in others can hardly be questioned.

There are certain facts which indicate also that, at times at least, a meningococcemia precedes the meningeal localization as we might expect in view of the facts mentioned. Cases have been described in which the organism has been recovered from the blood and also from joint lesions some time before the appearance of meningeal symptoms. Later, the organism was obtained from the spinal fluid. Observations of this kind naturally bring up the question as to the mode of entry into the system of the meningococcus.

In view of the relatively frequent occurrence of this organism on the nasal mucosa, there is probably little doubt that invasion occurs through the cribriform plate and the ethmoidal sinuses, as Weichselbaum first suggested. The acute rhinitis which frequently precedes and accompanies meningitis makes this view very probable. That it occurs in other ways is also probable. Westenhoeffer considers the tonsils a possible portal of entry, as they are not infrequently involved early in the disease and the meningococcus is often found in the throats of the patients. Pflaunder and Marx consider the possibility of the palatine tonsils as the point of entrance. The whole respiratory tract, in fact, might be looked on as affording a suitable point of entrance at times for these cocci.

After passing through the mucosa it is commonly supposed that they enter the lymphatics and perhaps the blood stream and localize on the meningeal surfaces. In order to explain this predilection for localization on the meninges, we may consider this process analogous to that which has been shown to occur in other infections. Intravenous injections of cholera bacilli into animals is followed by a localization of the infection in the small intestine. Similarly, dysentery becomes localized in the large intestine. Gonococci show a marked tendency to become localized on serous surfaces, especially those of joints. So meningococci when once in the blood or in the lymph show a strong affinity for the meningeal structures. Occasionally as in other diseases an anomalous localization occurs, and hence there arise the unusual findings referred to above, such as joint involvement; or localization may fail to take place altogether, thus explaining the origin of the pure meningococcus septicemia.

Assuming the idea to be correct that the meningococcus enters the system through the upper respiratory mucosa, the localization of these organisms on the meninges can not be explained by the nearness of these structures to the nasal mucosa. For the pneumococcus and streptococcus, organisms much more virulent, as a rule, than the meningococcus, at least so far as animals are concerned, are very often found on these mucous surfaces, and yet localization of them on the meninges is relatively rare compared with their localization in the viscera. It would seem that while the anatomic relationship of the mucosa and the meninges may play some part in determining the site of the lesion, a more important factor lies in a peculiar affinity of this organism for these structures. Just what this affinity is is not known, but it conforms to a general principle common in infectious diseases and emphasizes the fact that the chemistry of the structures is often of greater importance than their anatomic relationships in determining the location of infective processes.

TUBERCULOSIS OF THE THORACIC DUCT.

It is probable that if the thoracic duct were more systematically examined at autopsy it would be found to be the seat of tuberculosis more commonly than it appears to be. It is difficult to explain some cases of acute miliary tuberculosis, but the fact that an adjacent tuberculous lymphatic gland may undergo softening and break into the thoracic duct, or that the tubercle bacilli may enter the duct through the lymphatic channels from the intestinal tract without necessarily involving other structures, or even that a tuberculous lesion of the wall of the duct may undergo softening and rupture, will aid in the comprehension of the intensity and extent of the morbid process in some instances. The importance of this mode of invasion is perhaps not generally recognized nor sufficiently appreciated.

In a recent communication dealing with this subject Dr. Warfield T. Longcope[1] reports the result of a study of 30 cases of generalized tuberculosis, devoting especial attention to the thoracic duct as a point of origin for the spread of the disease. Nineteen of the cases were typical instances of generalized acute miliary tuberculosis, minute tubercles being scattered in enormous numbers through most of the organs of the body, and clinically pursuing a course of from two to twelve weeks. In 14 of these the thoracic duct was the seat of a more or less extensive tuberculosis, usually with caseating nodules, while in one instance many tubercle bacilli were found in smears from the duct-lymph, although no lesion of the wall of the vessel was discoverable. In eight instances the generalized process was subacute or chronic, lasting from three to nine months; large tubercles or caseous masses were scattered in small numbers through the various organs. The thoracic duct was involved in only two of these cases, the tubercles being small and few in number, while in one instance a few tubercle bacilli were found in smears from the fluid of the duct. In the remaining three cases the tuberculosis was chronic and confined to the lungs and the peritoneum, and in all of these the thoracic duct was free from involvement.

The lesion in the duct varied considerably. Sometimes there was a single large caseous nodule near the receptaculum or about the arch of the aorta, with small tubercles over the intima of the vessel above and below it. At other times several caseous nodules were scattered through the duct, while occasionally the walls of the duct were studded with small tubercles. In every instance the mesenteric, peritoneal, posterior mediastinal and bronchial lymphnodes were the seat of chronic tuberculosis. In some instances several groups of glands were affected, but more often a single group and rarely only one or two glands. Often the lesion in the duct appeared almost as old as that in the adjacent lymphnodes and the two were in close association, though direct extension of the process from the gland to the duct was never observed. In at least two instances the caseation of a small group of lymphnodes and of the wall of the thoracic duct constituted the only focus of chronic disease to be found in the body. From the evidence it may be inferred that the infection travels from the lymphnodes through the lymphatics to the thoracic duct. Tubercle bacilli, in the absence of demonstrable lesions, have been followed experimentally from the intestinal tract through the thoracic duct, into the mesenteric lymphnodes, in the walls of which they may find lodgment or whence they may be carried into the general circulation.

1. Bulletin of the Ayer Clinical Laboratory, No. 3, June, 1906, p. 1.

A GREAT MEDICAL DRAMATIST.

The recent death of Henrik Ibsen, the Norwegian dramatist, recalls to mind the fact that as a young man he studied medicine and that his interest in the progress of medical science never ceased during his long life. There is no doubt that his medical studies enabled him to see deeper below the surface of modern manners and morals than is usually the case, and thus enabled him to present the significance of life more fully than any of his contemporary dramatists. There is scarcely a play of Ibsen's written after his genius had reached his maturity which does not contain distinct pathologic elements, sometimes making it a very interesting presentation of a nosologic type easily recognized by the attentive physician. This is especially true with regard to the Ibsen plays that are most characteristic and popular. The fact is coming to be much more recognized than used to be the case.

For instance, there is little doubt that Ibsen's "Ghosts" is simply a putting on the stage of a case of paresis in all its hideous details. Oswald, the son, partly as a result of heredity, partly, as Ibsen makes it rather clear also, because of his own vicious freedom of life, has begun to have the preliminary symptoms of this dread disease. The development of it in all its unrelenting progress is dramatically represented in a wonderfully realistic manner. Oswald, because of some medical studies of his own, realizes the awful condition into which he is lapsing, and his sad exclamation to his mother, "Never to be able to work any more, never—never! to be living dead! Mother, can you imagine anything so dreadful"? shows how poignantly the realization came home to him, and is a lesson even to the physician of what constitutes the most serious torment in the advancing disease for the intelligent man who finds out what inevitably lies before him. We venture to say that no better clinical description of a case of paresis has ever been written than that which Ibsen thus presents in "Ghosts".

"Hedda Gabbler" is another one of the most popular of Ibsen's tragedies and at the same time characteristically pathologic in the basic idea and in the evolution of the plot. Poor Hedda is not of very strong intellect and has certain neurotic tendencies that manifest them-

selves mainly in an overweening conceit. She marries and becomes pregnant and gradually develops all of the characteristic symptoms of a psychosis of pregnancy. The story is supremely pathetic, and it almost seems too bad that the unfortunate condition which will sometimes develop under these circumstances should thus be made the subject of dramatic representation. The picture unrolls itself, however, with consummate dramatic genius and with wonderful richness of detail. It only requires a few words here and there in the midst of the action of the play to make the whole condition clear. Most of the audience probably do not suspect that it is a pathologic condition in which their interest is involved. In this respect the play reminds a physician of the corresponding state of affairs in real life in which often the nearest and dearest friends are the last to recognize the possibility that the affection is mental disease rather than merely an exaggeration of personal peculiarities.

In spite of the fact that the character of Nora in "The Doll's House" has been looked on by many of the new women as an exponent of the results that are almost sure to follow the development of the feministic movement and that are quite defensible, there is no doubt that here, too, is a question of pathologic condition rather than of any supposed strength of mind. Nora is the type of a woman of family harassed by domestic cares and by financial worries into a state of neurotic irritability in which ordinary common sense becomes so distant from her frame of mind as to be quite out of the question even in ordinary actions.

The enthusiasm with which Ibsen follows out each of these types of mental disturbance to its ultimate ramifications would remind one of an old pathologist sternly seeking for the cause of a pathologic condition that he had found and bending all his energies to the task until the primary lesion is reached. The work would be entirely too deterent for most people, yet Virchow has bent over the autopsy table for hours in the effort to find the beginning of such a process in the flesh and so to unravel the mystery of what has developed. This is the picture of Ibsen that is sure to come to the physician who knows his plays.

We venture to say that there is nothing in our modern literature that will appeal quite so thoroughly to the physician as Ibsen's work. Considering its relationship to medicine, it is surprising how much influence the Norwegian dramatist has had. Many of the subjects which he has found it possible to treat on the stage are usually considered to be tabooed in social circles, and it is one of his great merits that he has broken through some of the world's prudery—which is very far from prudence in most cases—and exposed some of the ulcerous, social sores to the antiseptic action of publicity. How great his genius was can be best realized from the fact that there is scarcely a dramatist prominent in the world at the present time who does not confess to have been influenced by Ibsen. In England, Pinero and Shaw have gone to school to Ibsen; in Germany, Hauptmann and Sudermann have practically confessed to being his disciples; in France, Brieux and Hervieu, whose works are the most vital of the French school, distinctly show his influence. Physicians may well acclaim him as a worthy colleague, some of whose training and wonderful insight is due to his study of medicine.

THE PURE FOOD LAW.

We print in another column the National Pure Food Bill, which, after nearly twenty years of struggle, is now a law. The ethical principles which underlie it are of the utmost importance and are now firmly established in national legislation. The law is far better in every respect than its most ardent supporters could reasonably have expected. When we consider the determined and able efforts which have been continuously made by the opponents of this legislation, and when we think of the wealth of expert testimony which has been advanced against it, we must confess to a feeling of grateful surprise that the measure is as strong as it is. There are doubtless many weak points in the bill, but the sentiment of Congress is such at the present time that when these weak places are discovered, as a result of experience, they will be eliminated and the bill strengthened.

The law is strong in its definition and not very weak in its concessions and, if properly supported by courts in sympathy with the measure—and all courts must be necessarily in sympathy with it—will protect our people against the evils of misbranded, adulterated and palpable frauds in foods and drugs. This law is an evidence of the fact that our national legislature can not be bought, for it is not an exaggeration to say that millions would have been forthcoming to prevent this legislation had it been possible to have prevented it with money. On the whole, the friends of purity of foods and drugs are to be congratulated on such a virile and comprehensive measure, reflecting, as it does, great credit on the wisdom and zeal of our legislators. When we further consider that this bill has become a law by a vote of 64 to 4 in the Senate and 242 to 17 in the House, we can see with what unanimity the principles of this measure were approved by the National Congress.

Unfortunately, the bill does not carry any appropriation for its enforcement, but this will be easily remedied, since Congress meets again in December and the act does not go into effect until Jan. 1, 1907. The same public spirit which secured the enactment of the measure in June will not fail to supply the funds for its enforcement in December. Meanwhile the Secretary of the Treasury, the Secretary of Agriculture and the Secretary of the Department of Commerce and Labor are to prepare the regulations for carrying the act into effect.

While giving credit to the few faithful members of the Senate and the House who year after year patiently

worked for the measure, such as Senator Heyburn and Congressman Hepburn (and Congressman Mann toward the last—for his final presentation of the case with the well-worked-out "object lessons" was the most effective argument on the subject ever presented), there were certain forces outside of Congress which had much to do with its passage. Undoubtedly, the strongest and most effective of these was the medical profession. Naturally, no class of people know as well as physicians the harmfulness, the wide prevalence and the varied character of frauds in food stuffs, and naturally, therefore, they were the ones to take the lead in the movement for the suppression of these frauds. And the American Medical Association, acting for the medical profession, through its Committee on Medical Legislation, with its far-reaching state and county auxiliaries, made it possible for physicians all over the country to act in unison, and consequently with effect.

THE CAMPAIGN AGAINST TUBERCULOSIS.

Although the communicability of tuberculosis had been suspected prior to the demonstration of the tubercle bacillus as the exciting agent, it was only after the discovery of this micro-organism that the channels of conveyance were definitely made known, and consequent on this knowledge it became possible to adopt rational measures looking toward restriction of the spread of the disease. A campaign of education was inaugurated, with the result that both the morbidity and the mortality have been greatly reduced, and the promise is that this reduction will go steadily on. In a discussion of the best methods to be pursued in the attack on tuberculosis, Dr. Robert Koch,[1] in the Nobel lecture, delivered at Stockholm at the close of the last year, reiterates his view as to the non-identity of the human and bovine forms of the disease. Accordingly, he considers infection by means of the milk and flesh of tuberculous cattle as a matter of little or no consequence. The chief medium of conveyance, he holds, consists in the discharges from cases of laryngeal and pulmonary tuberculosis in human beings, but, with simple precautions, the danger from this source can be converged to a vanishing point. The important factors in prophylaxis comprise care of the sputum, personal and domestic cleanliness, an abundance of light and air and of nutritious food, and avoidance of crowding. Notification is an indispensable adjunct, for without it many cases would remain officially unknown and the institution of protective measures be neglected. To facilitate the early recognition of the disease provision should be made for gratuitous examination of sputum. Koch makes a distinction between "open" and "closed" tuberculosis; that is, patients from whom tubercle bacilli are expelled and those from whom bacilli are not expelled. For the latter he would not require notification, but, inasmuch as one can not always foresee whether and when a closed case will become an open one, it would be better to make notification and record of all cases that can be correctly diagnosticated.

1. Lancet, May 26, 1906, p. 1449.

THE PHYSICIAN'S BEST ASSET.

The trust idea is the dominant factor in the civilization of our day; almost every business and calling is subject to it. The one profession, however, in which the individual is not entirely lost in the combination is medicine—wherefore we have reason, as physicians, to hold ourselves especially fortunate. When people are really sick and near to death they have no use for syndicated medical advice. Their trouble is then the most serious in human experience; and they want to have with them in their sore need the doctor whom they have learned through many trials to love and trust, and whose thorax contains the heart of a man. The trained and skillful practitioner of character and stamina is, in so far as he has these qualifications, in absolute control of his own output; nor can any man or combination of men deprive him of these resources and their legitimate reward.

Medical News

ILLINOIS.

Forbids Promiscuous Distribution.—In an ordinance recently passed in Monmouth the promiscuous scattering of samples of proprietary medicines is forbidden.

Resolutions of Respect.—At the annual meeting of the Cottage Hospital Association, Peoria, June 26, resolutions were unanimously adopted regarding the untimely death of Dr. Emerson M. Sutton, a valued member of the staff of that institution.

Hospital Cornerstone Laid.—The cornerstone of the new Oak Park Hospital at Wisconsin avenue and Madison street, was laid July 5, with elaborate ceremony. The Rev. Hugh O'Gara McShane delivered the principal address. The building is expected to be ready for occupancy January 1 next.

Hospital to Be Enlarged.—The Julia F. Burnham Hospital, Champaign, is to be enlarged to nearly double its present capacity. A two-story isolation ward is to be constructed, and a new and larger operating room on the third floor. The emergency ward will be located in the basement of the addition.

Ill and Injured.—Dr. Gerhard T. Nelson, Morris, fell June 12, injuring the muscles and tendons of the left leg.——Dr. Charles C. Gordon, Highland, is seriously ill with typhoid.——Dr. Charles S. Elder, Chenoa, fell down stairs June 28 and fractured a rib.——Dr. J. C. Harmon, Rantoul, who has been ill for several weeks, was taken to the Julia F. Burnham Hospital, Champaign, June 23.

Personal.—Dr. John C. Corbus, superintendent of the Illinois Eastern Hospital for the Insane, Hospital, has resigned.——Dr. Vachel T. Lindsay and family, Springfield, sailed for Europe, June 23.——Dr. Alfred Nash, Joliet, celebrated the fiftieth anniversary of his entrance into the practice of medicine, June 20.——Dr. Lester B. Cavins, Mattoon, has been appointed demonstrator of clinical medicine in Baltimore Medical College.——Dr. Eugene Cohn, St. Jacob, has been appointed assistant physician at the Illinois Eastern Hospital for the Insane, Hospital.

Farewell to Superintendents of Asylums.—Dr. and Mrs. Frank S. Whitman were tendered a farewell reception by the employés of the Northern Illinois Hospital for the Insane, Elgin, June 29, at which a cut glass punch bowl and frappé set and a gold watch, suitably inscribed, were presented to the retiring superintendent.——The employés of the Cook County Institutions, Dunning, presented Dr. Vaclav H. Podstata, the retiring superintendent, with a diamond pin, and at the same time presented Mrs. Podstata with a cut glass vase filled with flowers. The presentation speeches were made by President Brundage of the county board.

Attendants for Insane Hospitals.—The Illinois Civil Service commission is preparing to hold examinations for positions in the charitable institutions of the state. Examinations will be held in Chicago, July 25, and Lincoln, July 26, for matrons, housekeepers, and attendants in other institutions than the hospitals for the insane. Salaries range from $20 to $75 a

month, with board, lodging and laundry in addition. The commission will soon hold examinations for teachers in the school for the deaf at Jacksonville. These positions pay from $45 to $135 per month. One year's training or actual experience in teaching the deaf will be required. This examination has been opened to teachers outside of Illinois. The commission will soon hold examinations for physicians, pathologists, druggists, and nurses. These positions pay from $50 to $150 a month. All communications concerning these positions should be addressed to Joseph C. Mason, secretary, Springfield, Illinois.

Chicago.

Arrested for Spitting.—Dr. Irving Porges and seven other men were arrested June 21, for spitting on the sidewalk.

College Commencement.—The commencement exercises of Northwestern University were held June 21, when more than 500 degrees were conferred. Ten of the graduates in medicine were awarded special honors.

License for Hospital.—The Illinois Steel company which has maintained a hospital in its plant at South Chicago for a long time without compliance with the laws regarding the licensure of hospitals, has applied for and obtained a license.

Physicians' Club Election.—At the annual meeting of the Physicians' Club of Chicago, June 26, Dr. William T. Belfield was elected chairman and Drs. Charles H. Mix and Arthur M. Corwin were re-elected secretary and treasurer respectively.

Sanitarium for Sick Babies Opened.—The Lincoln Park Sanitarium for sick babies at the foot of Fullerton avenue, supported by the *Daily News* Fresh Air Fund, opened for the season June 25. During the summer of 1905 the sanitarium cared for 15,179 babies and 46,615 children.

Arrested for Selling Cocain.—Adolph C. Brendeke, a druggist, was arrested July 6 for the sixth time in one week, charged with selling cocain without prescription. The prosecutions were made at the instance of Hull House. During the last four years this man has been arrested sixty times on similar charges, and has been repeatedly fined.

Chicago's Health.—During the week ended July 7, 471 deaths were reported, 5 less than for the preceding week, and 51 more than for the corresponding week of 1905. This is equivalent to an annual death rate of 11.98 per 1,000. The principal death causes were as follows: Acute intestinal diseases, 56; consumption, 50; violence, including suicide, 43; Bright's disease, 41; heart diseases, 34; pneumonia, 32; and cancer, 27. During the week 25 deaths occurred from diphtheria, 5 from measles, 10 from scarlet fever, 3 from whooping cough, and 5 from typhoid fever.

Personal.—Dr. Svenning Dahl has gone to Europe, and during his absence Dr. Karl Doepfner will occupy his position as chief surgeon to the Norwegian Lutheran Deaconess Home and Hospital.——Dr. A. C. Girard, assistant surgeon general U. S. Army, retired, who was for a number of years on duty at Fort Sheridan, and afterward in charge of the U. S. Army General Hospital, Presidio of San Francisco, has located in Chicago.——Dr. Otto J. Stein has returned from Germany.——Dr. Thomas J. Robeson has been commissioned lieutenant colonel and assistant surgeon general I. N. G., and assigned to the third brigade.——Prof. Alexis Carrell and C. C. Guthrie of the medical department of Chicago University, have resigned.——Dr. and Mrs. Edward C. Streeter are now in Japan and will return to Chicago late in August.——Dr. Julia D. Merrill was rescued after being lost for twenty-four hours in the Adirondacks.——Dr. Julius F. Wengiersky has been appointed assistant physician at the Illinois Eastern Hospital for the Insane, Hospital, and Dr. Francis J. Sullivan, assistant at the Illinois Central Hospital for the Insane, Jacksonville.——Drs. H. John Stewart and Wellington T. Stewart ask us to announce that they have resigned all connection with the Finsen Light Institute of America.——Dr. John Guerin has been appointed a member of the Board of Education.——Dr. Antonio Lagorio has been made a member of the Chicago Public Library Board.

INDIANA.

Hospital for Muncie.—The Ball Brothers' Company, Muncie, have notified the officials of that city that they would build a $50,000 hospital this year and donate it to the city.

Do Not Want Names in Papers.—At the annual meeting of the Grant County Medical Society, held in Marion June 26, a resolution was adopted declaring it the sense of the society that members of the organization should insist on their names not appearing in any newspapers of the county in connection with the statement of any medical treatment or surgical service rendered. It was also resolved that the roll of the society be sent to all newspapers in the county.

Dr. Tighlman Hunt's Death.—At a called meeting of the Hendricks County Medical Society, resolutions were unanimously adopted regarding the death of one of the most earnest members of that society, Dr. Tighlman Hunt, Plainfield.

State Medical Board Upheld.—The Supreme Court on June 19 decided that the law giving the State Board of Medical Registration power to revoke licenses granted to physicians, is constitutional, and that such revocation, after a hearing of charges, does not involve the exercise of judicial power. The court reversed the temporary injunction forbidding the state board to revoke the license of Dr. John Milton Rhodes, Indianapolis, and the opinion was ordered certified to the Circuit Court, to become effective at once.

Personal.—Dr. Oliver P. Terry, Lafayette, will succeed Dr. Ernest G. Martin as instructor in physiology and anatomy in the medical department of Purdue University.——Dr. William T. Ferguson, Ft. Wayne, is critically ill at his home.——Dr. Joseph Bowlby, Shelbyville, was stricken with cerebral hemorrhage June 22.—Dr. S. K. Westhaver, Westport, has been commissioned lieutenant and assistant surgeon Indiana National Guard.——Dr. Albert H. Combs, health officer of Marion, has been seriously ill for several weeks.

MARYLAND.

Baltimore.

Benefit for Infirmary.—The Union Protestant Infirmary netted $991.06 by the open-air performance of "Twelfth Night."

Deaths of the Week.—The deaths rose last week to 278, which is equivalent to an annual rate of 20.91 per 1,000 for whites. There were 85 deaths under 5 years. Two were from suicide.

Personal.—Dr. Robert W. Johnson sailed for Germany July 6.——Dr. T. Morris Chaney has been appointed superintendent of the South Baltimore Eye, Ear, Nose and Throat Charity Hospital.——Dr. Harry Friedenwald has been re-elected president of the Federation of American Zionists.——Prof. John C. Hemmeter was honored with an invitation to deliver a clinic in Berlin and on June 21 was the guest of Dr. Julius Pagel, professor of the history of medicine in the University of Berlin.——Dr. Ridgely B. Warfield sailed for Europe July 3.——Dr. William N. Hill left July 7 for Alaska, where he expects to remain a year.——Dr. James J. Mills is spending the summer in Europe.

MASSACHUSETTS.

Personal.—Dr. Edward M. Hartwell, Boston, has been appointed by the governor head of the new commission to have in charge matters pertaining to the adult blind in the state, to serve for a term of five years. Dr. Joseph H. A. Matte, North Adams, has been appointed a member of the same commission for a period of two years.

The Water Supply.—With the opening of July the metropolitan reservoirs have almost 49,000,000,000 gallons of water on hand. The use of water per capita through the district is increasing steadily. The largest consumers during May, 1906, were Boston, 149 gallons per capita daily; Quincy, 114; Melrose, 113; Winthrop, 106; Medford, 104; Lexington, 97; Somerville, 90.

Add to Harvard Faculty.—Harvard Medical School faculty is to be strengthened next year by the addition of the following twelve instructors: Carl Lucas Alsberg, John Bapst Blake, Richard Clarke Cabot, Elbridge Gerry Cutler, Henry Jackson, Elliot P. Joslin, Howard Augustus Lothrop, James G. Mumford, Charles Allen Porter, Edward Wyllys Taylor, Herman Frank Vickery and James Homer Wright.

Floating Hospital.—The Boston floating hospital resumed its works for 1906 July 11. The new boat has been launched, but is not yet entirely ready for service. Hence for a few weeks the work will be carried on the barge Clifford as heretofore. The visiting staff is the same as last year, being Drs. William E. Fay and John L. Morse for July and Drs. Samuel Breck and Arthur W. Fairbanks for August. Dr. Robert W. Hastings remains resident physician and will have as house staff: Seniors, Dr. Horace K. Boutwell, Boston, and Dr. Lawrence D. Chapin, Springfield, Mass.; juniors, R. A. Sadler, Boston; George H. Bodley, New Haven, Conn.; Lester H. Trufant, Montreal; Samuel F. Mullens, New York City. Externes, Dr. Arthur L. Kendall and Daniel J. Levy. The medical assistants will be George A. Foster, G. W. Morse, H. F. Troufman, Solomon H. Rubin, Laurence E. Pool, F. A. Bartlett, Maude E. Warren and Jennie Segal.

NEW YORK.

New Staff for Vassar Hospital.—Dr. Henry Greenwood Bugbee has been appointed house surgeon of this hospital to succeed Dr. Guy C. Bayley, retired. Dr. Ellen Gardner Littell has been appointed assistant.

Academy Election.—At the annual meeting of the Buffalo Academy of Medicine, June 12, Dr. Charles S. Stewart was elected president, Dr. William I. Thornton treasurer, and Dr. Grover W. Wende trustee.

Injunction Granted.—Supreme Court Justice Lyon has granted a temporary injunction restraining the mayor and health officers of Binghamton from attempting to remove Health Officer Dr. I. Adelbert Hix from his position, and to instal in his place Dr. Ray R. Beardsley.

Guilty of Illegal Practice.—Horace D. Hyde, an oculist of Rochester, plead guilty to practicing medicine without a license and sentence was suspended. The prosecution was undertaken by the Monroe County Medical Society, the Monroe County Homeopathic Society, and the Rochester Optical Society.

Hospital News.—The common council of Corning, at its meeting on June 4, appropriated $1,200 toward the maintenance of the Corning Hospital.——The state is expending $342,000 in improving and enlarging the Hudson River State Hospital, Poughkeepsie. The enlarged hospital will accommodate 3,000 patients and 800 nurses.

Against Adulterated Drugs.—The State Board of Pharmacy at Niagara Falls adopted a resolution designed to prevent the sale of adulterated drugs. The resolution defined adulterated drugs as those which do not come up to the standard in purity and quality established by the United States Pharmacopeia, and includes also prescriptions in which an article is substituted for one prescribed or in which the component parts of the medicine are in greater or less degree than prescribed.

Sanatorium for Yonkers.—Alexander Smith Cochran has purchased 110 acres of land in Yonkers on which he will erect a sanatorium for the treatment of tuberculosis. The entire cost of land, buildings and equipments will be more than $500,000. The establishment will be turned over to the city, together with an endowment sufficient to pay all expenses for the first five years. The main building will have 25 beds, and provision will be made for the treatment of many other patients in tents. It is hoped that the institution may be opened late in the fall.

Personal.—Dr. Raymond E. Turnbull, Elmira, has been commissioned surgeon N. G. N. Y., and assigned to the thirtieth separate company, Elmira, succeeding Dr. Reeve B. Howland, who has been made battalion surgeon, with the rank of captain.——Dr. John Van Dyne has resigned as professor of surgery in the College of Medicine of Syracuse University, and Drs. Nathan Jacobson and David M. Totman have been appointed professors of surgery. Dr. Van Dyne remains in the faculty as professor of the history of medicine.——Dr. Thomas Jamieson, Rochester, sailed on the *Umbria* for Liverpool, June 16.——Drs. Charles L. Witbeck, Cohoes, and Willis G. Macdonald, Albany, have sailed for Europe.——Dr. Nelson G. Russell, Buffalo, has gone to Europe.——Dr. Charles E. McClary, assistant health officer of Syracuse, has resigned.——Dr. Daniel R. Gratton, health officer of Depew, has resigned, and Dr. George N. Jack has been appointed in his stead.——Dr. George Graves, Herkimer, sustained serious contusions in a collision between a locomotive and his automobile, June 14.

New York City.

Breathing Specialist Not Guilty.—In the case of the Medical Society of the County of New York against Miss Melje Van Dusen Cavalier, charged with violation of the medical laws, the judge declared the defendant not guilty.

Election of Officers.—The Harlem Medical Association, at its meeting June 6, elected the following officers and trustees: Dr. William H. Stewart, president; Dr. Charles Clinton, vice-president; Dr. Martin Cohen, secretary; Dr. John Remer, treasurer; and Drs. Henry Heiman, Edward L. Cocks, and Percy H. Fridenberg, trustees.

Physicians Convicted.—Dr. Oscar A. Spier was sentenced to three months' imprisonment May 31 for furnishing illegal prescriptions to women.——Joseph Sohmer, John Frach and Mary E. B. Frank, against whom charges were made by the county medical society for violating the medical laws of the state, were convicted in special session, June 23.

Commencement.—Degrees were conferred on a class of 158 at the commencement exercises of Cornell University Medical College, held June 13. The dean, Dr. John D. Rushmore, administered the Hippocratic oath, Dr. John A. McCorkle, president of the collegiate department, conferred the degrees, and Dr. Cleland B. McAfee made the address to the graduating class.

New York Garbage.—The Street Cleaning Department has assured the State Board of Health of New Jersey that the garbage from the city will be taken 15 miles to sea and that in case this does not mitigate the present nuisance along the Jersey coast, the distance will be increased to 20 miles, and that a barge will be stationed to see that employés observe the rules.

New Quarantine Regulations.—The new quarantine regulations affecting Cuban ports went into effect in the port of New York June 23. Under these regulations all passengers on steamships from Havana and other Cuban ports must produce certificates showing they are immune from yellow fever. Their failure to do this will necessitate their being held under observation until five days since their departure from Cuba.

New Department for Dispensary.—The Brooklyn Central Dispensary has created a department of gastrointestinal diseases, which will be under the supervision and direction of Dr. Mark I. Knapp, New York City. Clinical lectures on gastrointestinal subjects will be given by Dr. Knapp every Wednesday afternoon at 3 instead of on Thursday, as heretofore. Regular postgraduate courses in gastrointestinal diseases will be given at the dispensary by Dr. Knapp, beginning in the autumn.

Contagious Diseases.—There were reported to the Sanitary Bureau for the week ended June 30, 440 cases of measles, with 12 deaths; 362 cases of tuberculosis, with 18 deaths; 242 cases of diphtheria, with 30 deaths; 110 cases of scarlet fever, with 9 deaths; 59 cases of varicella, with no deaths; 39 cases of typhoid fever, with 14 deaths; 39 cases of whooping cough, with 4 deaths; 29 cases of cerebrospinal meningitis, with 16 deaths, and 3 cases of smallpox, with no deaths, making a total of 1,323 cases, with 265 deaths.

Seaside Hospital Assured.—The Association for Improving the Condition of the Poor has secured the $125,000, which was necessary in order to claim the $125,000, promised by John D. Rockefeller on condition that a like amount should be raised by the association, to erect a permanent hospital for children afflicted with tuberculosis of the bones and joints. There are at present 4,500 cases of this kind in New York and thus far only 44 are being treated at the Sea Breeze Hospital. It has been suggested by the vice-president of the association that the city should provide the site for the proposed hospital.

Infirmary Asks Funds.—Additional annual donations of $10,000 are asked for by the board of directors of the New York Eye and Ear Infirmary, in their annual report for 1905. The expenses of maintaining the institution during the year were $76,074, while the receipts were nearly $1,700 less than the expenditures. During the year there were treated in the infirmary 2,102 house patients; 23,579 days' hospital care were given, with 5,811 days' free treatment, and nearly one-third of the ward patients had beds free of charge. In the out-patient department 37,606 new cases were registered, and 125,509 visits were made. The infirmary needs space for the pathologic department, and for a clinical lecture room, which will cost about $15,000, and it also needs a nurses' home.

Personal.—Dr. John Overton of the Harlem Hospital, was recently operated on for appendicitis.——Dr. Albert H. Garvin has been appointed first assistant at the State Hospital for the Treatment of Incipient Tuberculosis, Raybrook.——Dr. John A. Irwin has sailed for Glasgow on the *Columbia*.——Dr. and Mrs. John G. Curtis have sailed for Naples on the *Prinzess Irene*.——Dr. Thomas Darlington, president of the city board of health, and his son, were seriously injured in a runaway accident in Otisville, June 30.——Dr. and Mrs. Louis H. Warner, Brooklyn, sailed on the *Deutschland* for Hamburg, June 28.——Dr. Warren A. James, Brooklyn, sailed on the *Grosser Kurfuerst* June 7.——Dr. and Mrs. Frederick H. Nies have gone to Europe.——Dr. Burden Harris, house surgeon of the German Hospital, Brooklyn, was given a dinner by the staff of that institution, June 1.

Hospital News.—The Nassau Hospital endowment fund association has in its treasurer's hands $3,000 to be used to endow a bed in the Nassau Hospital. Through the generosity of Mrs. W. K. Vanderbilt, Jr., a large and costly addition is being made to the hospital.——The plans have been approved for a three-story brick wing for St. John's Hospital, Long Island City, to cost $160,000.——Plans have been filed for a summer hospital to be erected on the East River to cost

$10,000.——W. V. Lawrence has given Bronxville two and a half acres of land, on which he will erect three buildings, two of which are to be used for hospital purposes, the whole gift amounting to $100,000.——The recent garden party in Brooklyn in aid of St. Mary's Hospital netted $6,000 for the institution.

PENNSYLVANIA.

Gift to Hospital.—William McCormack, Philadelphia, has given $7,000 to the children's ward of the Williamsport Hospital. This makes up the shortage of the institution and renders it free of debt.

Tents for Consumptives.—The trustees of the State Hospital for the Insane, Norristown, at their regular meeting July 6, decided to employ tents in the treatment of patients afflicted with tuberculosis. More than thirty inmates of the institution are troubled with this malady.

Coroner Busy.—The heaviest death rate of any month in the year is shown in the report of the coroner of Allegheny County for June. Two hundred and eighteen deaths were investigated, an increase of 23 over those reported in May. Of the violent deaths 5 were from homicide, 9 from suicide, and 128 from accidental causes.

Alumni Meeting.—The Alumni Association of the Western Pennsylvania Medical College, Pittsburg, held its twentieth annual meeting and banquet June 11, at which the following officers were elected: President, Dr. Edward E. Mayer; vice-president, Dr. George C. Johnston; and secretary, Dr. Thomas Wray Grayson, all of Pittsburg.

Restrained from Practice.—By a decree handed down by Judge Doty "Dr." Edward Barnes, Monessen, is restrained from practicing medicine in Westmoreland County. Westmoreland County Medical Society investigated this case and alleged in its petition that Barnes had never been a regular practicing physician, and that he had served eight years in the Western penitentiary for arson, said to have been committed in Allegheny County.

Personal.—Dr. A. E. Newton, Sharon Hill, has gone to Europe.——Dr. Guy S. Shugert has been appointed surgeon for the Pennsylvania lines at Rochester, Pa.——Dr. Daniel H. Jenkins, Scranton, was thrown from his carriage June 25, and sustained a concussion of the brain and severe contusions of head and face.——Dr. Frank H. Fleet, Greenville, fell, June 11, fracturing his femur.——Dr. Ernest F. Nelson, Grove City, has been appointed city physician.

Pennsylvania Relief Report.—The monthly report of the employés' relief fund for the Pennsylvania Company's lines east of Pittsburg and Erie shows that the payments of benefits to its members and families of deceased members during May amounted to $116,174.44, of which $47,066.04 was on account of death and $69,109.40 on account of disablement by sickness and accident. The payments thus far are stated to have amounted in the aggregate to $15,019,499.05, of which $6,163,864.08 was on account of death of members, and $8,855,634.97 on account of disablement.

Hospital News.—The Braddock General Hospital, erected at a cost of about $40,000, with accommodations for 50 patients, was opened June 27 by a formal reception, which was attended by more than 1,000.——The distribution committee of the Hospital Saturday and Sunday Association gave $1,800 to the Allegheny General Hospital, $1,180 to West Penn Hospital, $682 to the South City Hospital, $417 to St. John's Hospital, $380 to the Pittsburg Hospital for Children, $125 to the Presbyterian Hospital, and $100 to the Pittsburg Free Dispensary.——The kirmess recently held at Erie netted $11,714.53 for the Hamot Hospital.——The Harrisburg Hospital received $2,000, the receipts of a country fair given by the Country Club of that city.——Work is about to be started on the proposed addition to the Allegheny County Hospital for the Insane, Woodville. The institution now accommodates 400, and the addition will provide room for 100 more.

Philadelphia.

Another Examination.—Owing to the failure of applicants to attain the required average of 70, the Civil Service Commission announces that another examination will be held for chief resident physician at the Philadelphia Hospital, Blockley.

Slaughter Houses Closed.—As a result of the investigation by the Board of Health into the condition of the city's slaughter houses, out of 171 inspections 37 were ordered closed on the ground of being general nuisances, inimical to public health.

Telephone Booths Condemned.—It is stated that unless the public telephone booths distributed throughout the city are kept in a more sanitary condition, warning signs will be posted by the board of health. The booths in the municipal buildings may be closed or removed. The inspection of the booths has been delegated to the medical inspectors.

Hospital Report.—The report of the Medico-Chirurgical Hospital for June shows that 5,724 patients were treated in the different departments of the hospital. The report of the Polyclinic Hospital for the same period shows that 106 patients were admitted to the wards, that 2,037 new patients were treated in the dispensaries, and that in all 8,641 patients were treated in the various clinics.

War on the Mosquito.—The work of destroying mosquito-breeding places is being undertaken by the Bureau of Health. The health officers propose to treat all pools of water and all stagnant pools on marshy ground and all mosquito-breeding areas with kerosene. The Health Bureau directs that all householders shall be diligent in seeing that no water be allowed to collect in back yards or other places.

Oncologic Hospital Report.—The first annual report of the American Oncologic Hospital indicates that 45 patients out of 106 were discharged "without manifest evidence of return of the disease," and 12 others in improved condition. The report of the treasurer shows that the total receipts of the hospital from all sources were $14,133.87, or within about $65 of the total expenditures. A net indebtedness of $996.01 is left.

Free Ice for Poor Sick.—$5,000 has been appropriated by the City Council for the purchase and distribution of free ice for the deserving poor sick. Director Coplin of the health department will distribute the ice through the corps of district physicians. The health department will have printed a number of checks, each of the denomination of five cents. These checks will be placed in the hands of the district physicians in every ward of the city, who will issue the checks, giving preference to the deserving poor sick.

Fire Apparatus for Hospital.—The Jewish Hospital will soon be equipped with its own fire-protection apparatus by the presentation of a special pump by Howard A. Loeb. The plans as outlined and executed will give the hospital one of the finest if not the best fire-fighting apparatus in any institution of the character in this country. The pump will have the capacity of about 200 gallons a minute. A chemical engine has also been provided by the hospital authorities, and the employés of the institution have been organized into a drilled fire brigade.

Health Report.—The total number of deaths reported for the week ended July 7, reached 651, the largest number reported in any one week since the corresponding week of 1901, when 800 deaths were recorded. Included in the death list were 277 infants. The principal causes of death were: Typhoid fever, 12; measles, 4; pertussis, 24; consumption, 54; cancer, 31; apoplexy, 26; heart disease, 31; acute respiratory disease, 32; enteritis, 157; appedicitis, 5; Bright's disease, 49; suicide, 10; heat stroke, 17; accidents, 18, and marasmus, 14. There were 129 cases of contagious disease reported, with 15 deaths, as compared with 175 cases and 14 deaths reported in the preceding week.

Personal.—Dr. James P. Coll was thrown from his carriage in a runaway July 2 and painfully injured.——Dr. Harrison A. Dunn, while on emergency duty in Fairmount Park, July 4, was attacked with acute appendicitis and operated on in the German Hospital.——Drs. S. Lewis Zeigler, Charles C. Grayson, Ralph W. Seiss, and William Krause sailed for Europe July 5.——Dr. Joseph S. Gibb will sail for Europe July 19.——Dr. and Mrs. Lewis H. Adler, Jr., are making an extended tour through California and Alaska.——Dr. and Mrs. James A. Irwin sailed for Europe June 16.——Dr. James R. F. Bell has resigned from the state commission appointed to award the contract for an institution for the feeble minded at Spring City.

Money for Charity.—The German Hospital has received $5,000 from an unknown donor for the establishment of a free bed in that institution to be known as the "Herman Hassenbruch Free Bed."——By the will of the late Mrs. Sarah B. Nixon-Nirdlinger, the Jewish Seaside Home, Atlantic City; Jewish Foster Home and Orphan Asylum; New York Hospital for Diseased Crippled Children, New York City; and St. Anthony's Poor, each receives $500.——A block party recently held in behalf of the Roosevelt Hospital, netted $105 for that institution.——By the will of the late Joseph Sinnott, the hospital of the University of Pennsylvania is bequeathed $10,000 for the endowment of a room for one sick person at a time who shall have been a newspaper writer in preference

to any other employment. The endowment is in commemoration of the testator's dead son, Joseph B. Sinnott. Other charities benefited by the will are: St. Joseph's Hospital for a free bed in commemoration of a deceased son, Henry G. Sinnott, $5,000; Sisters of Mercy Sanitarium of Gabriel's, New York, $5,000; Conference of St. Vincent de Paul and Philadelphia Home for Incurables, each $1,000.

Aftermath of Fourth of July.—The celebration of Independence Day caused an unusual number of accidents from the use of explosives, although there was a singular absence of any very serious mishaps. Several persons were injured by stray bullets, carelessly handled pistols, and others lost fingers or sustained injuries to their eyes, but no deaths were recorded to mar the day. In 1904 four persons died as a result of the celebration. A table of injuries as reported by the police and hospital authorities is given below, and with it last year's report for comparison:

	1906.	1905.
Fireworks	291	108
Cannons	33	7
Firearms	81	36
Gunpowder	314	289
Toy pistols	62	90
Runaways	1	4

Phipps Institute Report.—The second annual report of the Henry Phipps Institute shows that the work of the institute is on the increase, as all the beds have been full at all times. During the year 1,561 patients were admitted, 1,382 of whom were admitted into the dispensary and 294 into the hospital proper. Of the total number admitted, 115 were admitted both to the dispensary and hospital. Of the patients admitted, 440 had been treated in the dispensary during the previous year; 62 had been treated in the hospital, and 8 had been treated in both. Of the patients admitted to the dispensary 942, and of those admitted to the hospital, 198 were new cases. Of these, 73 were treated in both the hospital and in the dispensary. There were, therefore, 1,067 new cases admitted for treatment during the year. Of the dispensary cases, 179, and of the hospital cases, 3 were either non-tuberculous or unsuitable, leaving 763 proper cases of true tuberculosis in the dispensary and 195 in the hospital for the year. Adding these together and substracting from them 73 cases which were treated in both hospital and dispensary, there are left 885 new cases to report. As in the previous year nearly one-half of the patients were foreign born, many of them having been in this country a comparatively short time before coming under observation. The report shows that the majority of people who applied for treatment were above the height which is laid down as the average height for men and women. The report shows that this in a measure supports the prevalent idea that tallness is conducive to tuberculosis.

GENERAL.

Malaria on the Isthmus.—It is stated in *Public Health Reports* that, since the rainy season has set in and anopheles are abundant, malarial fever has increased among the negroes and the hospitals are crowded to their full capacity. The recently arrived West Indian negroes, especially those from cholera among the soldiers. The health bureau is taking to the Isthmus by the Canal Commission, are the greatest sufferers.

Cholera Epidemic in the Philippines.—Cable reports from Manila state that cholera is again epidemic in the islands. Twenty-one cases and sixteen deaths were reported in Manila on July 4. Four Americans are said to have been stricken and one American died from the disease. The suburbs near Fort McKinley have been quarantined. There has been one death from cholera among the soldiers. The health bureau is taking every precaution to prevent the spread of the disease. A circular has been distributed among citizens warning them of the danger and requiring that precautions be taken. While the situation is serious, the health officials do not fear an epidemic of great proportions. The greatest difficulty is experienced in getting natives to report cases of sickness, as the Filipinos fear the health officials and are concealing cases from them.

Yellow Fever and Dengue in Cuba.—Passed Assistant Surgeon von Ezdorf states, in *Public Health Reports*, that two cases of yellow fever were reported in Havana June 18 and 20, respectively. Four suspect cases were reported under observation during the same week. Dr. von Ezdorf states that on account of the quarantine declared by New York against Cuba by which passengers will be required to remain in detention at New York to complete five days, certificates of immunity will be issued by the Public Health and Marine-Hospital officials to passengers presenting proper evidence. The evidence accepted is proof of having had yellow fever or of ten years' residence in an endemic focus. For Cubans, the proof of evidence must be ten years prior to December, 1901, the date when Cuba ceased to be an endemic focus; ten years' residence in Key West prior to 1887 is also accepted, but such evidence must have the visé of the representatives of the service at Key West. In order that the records may be complete for the future identification of the individual, two small photographs are required to complete the registration. These can be obtained by the individual at a very small expense. Cuba will raise quarantine against southern ports of the United States on July 8. Sixteen cases of dengue were reported in Havana during the week ending June 23; 14 of the patients have recovered. Taken with the 14 cases occurring during the previous week, this disease seems to be on the increase.

Public Health Service Wants Physicians.—At the Bureau of Public-Health and Marine-Hospital Service, 3 B street, SE., Washington, D. C., August 6, at 10 a. m., there will be an examination of candidates for assistant surgeonships. Candidates must be between 22 and 30 years of age, graduates of reputable medical colleges, and must furnish testimonials from responsible persons as to their professional and moral character. Candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate. The examinations are chiefly in writing on the various branches of medicine, surgery and hygiene. The oral examination includes subjects of preliminary education, history, literature and natural sciences. The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on a cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. On appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York New Orleans, Chicago or San Francisco. Assistant surgeons receive $1,600 a year; passed assistant surgeons, $2,000, and surgeons, $2,500 a year. When quarters are not provided, commutation at the rate of $30, $40 and $50 a month, according to grade, is allowed. All grades above that of assistant surgeon receive longevity pay, 10 per cent. in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address the Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.

CALIFORNIA RELIEF FUND.

The following contributions are acknowledged:

INDIVIDUAL CONTRIBUTIONS.

Allen, Justin, Topsfield, Mass.	$ 3.00
Physicians of Union County, Pa.	19.00
Stevenson, G. E., Gorham, N. Y.	2.00
Vaughan, Z. E., Waskam, Texas.	2.00

SOCIETY CONTRIBUTIONS.

Academy of Medicine, Cincinnati, Ohio	170.00
Denton County Medical Society (Iowa)	10.00
Chickasaw County Medical Society (Iowa)	1.00
Drew County Medical Society (Ark.)	10.00
Medical Society of New Jersey	410.70
Mills County Medical Society (Iowa)	10.00
Newport County Medical Society (R. I.)	36.00
Vigo County Medical Association (Ind.)	66.25
Waterbury Medical Association (Conn.)	25.00
Total	$764.95
Previously acknowledged	$11,826.05
Grand total	$12,591.00

The Philadelphia Total.

The total Red Cross fund, which has been raised at Philadelphia for the relief of the San Francisco sufferers, amounts to over $210,000.

Contribution of Books.

The W. B. Saunders Company, Philadelphia, has donated to the Physicians' Relief Committee of San Francisco, $1,000 worth of their publications.

CANADA.

Antituberculosis Association.—The Antituberculosis Association of British Columbia has issued a letter to the residents of that province soliciting funds for the erection of a sanatorium at a cost of $100,000.

Tuberculosis Exhibition in Toronto.—A tuberculosis exhibition is to be held in Toronto August 21-25 during the meeting of the British Medical Association.

"Patent-Medicine" Bill.—A "patent-medicine" bill, requiring all manufacturers to submit samples to the government, has been prepared by the Dominion chief analyst and has been presented to the House of Commons for consideration. It is feared that it will be difficult to pass it this year.

Extension of University Course.—The corporation of McGill University, Montreal, has approved of a resolution submitted by the medical faculty thereof, advising the extension of the present course of medicine to one of five years. It is likely that the change will go into effect in the session of 1907-08.

Fire at Queen's Medical College.—Queen's Medical College building at Kingston, Ont., was destroyed by fire July 4. Only the secretary-treasurer's books were saved. Valuable medical and scientific apparatus and pathologic specimens were burned. The loss will be about $70,000, on which there was an insurance of $22,000. The bacteriologic and public health laboratories were completely destroyed. Repairs will be started at once and a new building prepared as soon as possible.

Personal.—Dr. T. A. Starkey, professor of hygiene in the University of McGill, has been elected a fellow of the Royal Sanitary Institute. This is the first time that this honor has come to this side of the Atlantic.——Dr. William Oldright, professor of sanitary science in the University of Toronto, has returned from the International Medical Congress at Lisbon and the International Hygienic Convention at Milan, having attended both as the representative of the Ontario Board of Health.——Dr. Francis J. Shepherd, Montreal, professor of anatomy in the University of McGill, has just been elected president of the Montreal Art Association in succession to Sir George A. Drummond.——Dr. A. McPhedran, Toronto, president of the Canadian Medical Association, has returned from the meeting of the International Medical Congress.

Hospital News.—The district labor council of Toronto is endeavoring to prevail on the Toronto General Hospital Trust to allow all public ward patients the privilege of choosing their own physicians.——The Toronto General Hospital has adopted the new principle of choosing its house surgeons by competitive examination. Seven vacancies have recently been filled in this manner. The term of service has also been extended from one year to one and a half years.——The Hospital for Sick Children, Toronto, has just reorganized its staff and appointments are made for one year dating from July 1. ——By the will of the late Miss Elizabeth Orkney, Montreal, charitable institutions of that city will receive nearly half a million of dollars. The Montreal General Hospital will receive $50,000; the Protestant Hospital for the Insane at Verdun, Quebec, $50,000, and McGill University, to found a scholarship, $50,000. The late Miss Orkney was a generous benefactor of charitable institutions in Montreal all her life. scholarship, $50,000. Miss Orkney was a generous benefactor of Montreal institutions all her life.——Toronto General Hospital graduates will hold a convention in Toronto during the meeting of the British Medical Association. About 200 are eligible for membership in the association recently formed by the house surgeons, and a big reunion is expected. Dr. L. F. Barker will deliver an address.——The new board of trustees of the Toronto General Hospital will meet in a few days for organization, all the twenty-five members which will constitute the board hereafter having been appointed. There are three medical men on this board, namely, Prof. A. B. MacCallum, F.R.S., Dr. J. O. Orr, manager of the national exhibition, and Dr. John Noble, an alderman for the city of Toronto.

Ontario Medical Council Annual Meeting.—The medical council of the Ontario College of Physicians and Surgeons has just finished its annual session in Toronto. The following officers were elected: President, Dr. W. H. Moorhouse, London; vice-president, Dr. Spankie, Wolfe Island; treasurer, Dr. H. Wilberforce Aikins, Toronto; registrar, Dr. R. A. Pyne, Toronto. Dr. William Osler was licensed to practice in Ontario, "as a slight recognition of his great ability and the high standard he has obtained in his profession." The discipline committee presented charges of unprofessional conduct against four practitioners, and the name of one of these was struck from the register, only one councilor voting to retain it. Sir James Grant, Ottawa, presented a resolution, which was carried unanimously, to ask the Ontario government to provide better inspection of schools, in order more effectually to combat the spread of tuberculosis. The former building of the council having been sold, the property committee reported that owing to the high values prevailing, a suitable site had not yet been secured for the proposed new building. The annual meeting will be held next year at Kingston. It is many years since the council met outside of Toronto.

Ontario Board of Health.—At the quarterly meeting of the Ontario Board of Health in Toronto in June, the chief item of interest discussed was the increase in infant mortality. On this subject, the secretary, Dr. Charles A. Hodgetts, presented a strong report. According to this, the population of Ontario in 1904 was 2,203,768. The births in that year numbered 50,265, including 1,690 stillbirths. The birth rate was, therefore, 22.8 per 1,000, an increase of 0.7 over 1903. There were 798 children born out of wedlock. The marriages numbered 19,789 in all. The death rate was 14.1 per thousand, there having been 30,920 deaths. Special mention was made of stillbirths, which have been steadily increasing year by year, as the following figures show: 1897, 435; 1898, 532; 1899, 419; 1900, 578; 1901, 780; 1902, 823; 1903, 933; 1904, 1,690. It is expected that a reorganization of the Ontario Board of Health will soon be made by the government. One report says that the present secretary will become chairman, and have associated with him the bacteriologist, the medical inspector, the provincial chemist and the provincial analyst. These would do the work now performed by the present board, which is not fully manned, owing to the recent deaths of two members. In addition, an advisory council would be appointed from various sections of the province to meet the board from time to time as required.

FOREIGN.

Australasian Medical Congress.—The eighth session of the Australasian Medical Congress will be held at Melbourne, October, 1908.

Prizes of Vienna Academy of Sciences.—Prof. A. Durig of Vienna has been given the Lieben prize for his research on the dependence of the organism on its proportion of water for the functioning of the muscular and nervous systems. The Seegen prize was given to A. Krogh of Copenhagen for his works on the elimination of nitrogen.

Yellow Fever in Mexico.—It is reported that several cases of yellow fever have occurred in Merida and that a number of suspicious cases are under observation. From June 1 to 17, seventeen cases of yellow fever occurred in this city, with four or five deaths. Some of the cases were imported, but many originated in the city of Merida.

Prizes for Research on Sleeping Sickness.—The King of Belgium, as sovereign of the Congo Free State, has appropriated $40,000 to be awarded as a prize to the person who discovers a remedy for sleeping sickness. Competition is open to all nationalities. In addition, about $60,000 will be given as a special grant to further research on the prophylaxis and treatment of the disease.

Naming Streets After Living Physicians.—The *Semaine Méd.*, in a recent issue, states that the town of Hagen in Prussia has been contemplating changing the names of some of its streets to do honor to living celebrities. Two of the names proposed are those of physicians, von Behring and Koch, and Roentgen's name was also suggested. In advocating the measure, one of the speakers remarked that it would please the medical profession to have its members thus honored, but another speaker expressed some doubt on this point, as the three streets in question all lead to the cemetery.

Physicians in Public Life in Spain.—Again our Madrid exchange, the *Siglo Medico*, appears in gala dress to celebrate the nomination of one of its former editors to the national cabinet. Dr. Cortezo, one of the three proprietors and editors of the journal, was made minister of the interior last year, and now Dr. A. San Martin, who was one of the editors several years ago, has been appointed minister of public instruction. These appointments are the first for many years raising a member of the medical profession to the cabinet. It is certainly a curious coincidence that both of the appointees should have been connected with our Madrid contemporary. Both physicians had long been members of the senate.

Completion of the Pathologic Institute at Berlin.—The new Pathologic Institute was formally dedicated June 10, and it is said to represent the realization of Virchow's highest ideal of an institute for research in this line. The historic building in which he worked and taught is to be demolished. His plans for the new institute have been amplified, much space having been given for photographic purposes and lantern demonstrations, especially in the dissecting building. The group of buildings comprise the museum which was finished in Vir

chow's day, the main building, the "Obductionshaus" and the animal building. The institute is in charge of Orth, who has continued Virchow's work as professor and also as editor of *Virchow's Archiv*.

Demonstration of the Importance of Sunshine in Prevention of Tuberculosis.—For 12 years a "health register" has been kept of every house in Paris, as recently mentioned in these columns. Comparison of the records has shown that ordinary insanitary conditions and overcrowding do not favor the development of tuberculosis so much as the absence of sunshine. Old, dirty and wretched houses in the outlying districts, with plenty of light and sunshine, do not show so many cases of tuberculosis as new and luxurious houses in the wealthier quarters without free access of light and air, especially if the inner courts are narrow and the number of servants large. Many of these expensive new buildings were found to be hotbeds for tuberculosis, according to Graux's article on the subject published in the May number of *Tuberculosis*.

French Medical Study Trip.—The eighth annual trip of medical men and their ladies to various watering places commences this year at Lyons September 1. The watering places visited will be those in Savoie and Dauphiné, in the southeastern part of France. The party will disband September 12. Dr. Carron de la Carrière, 2 rue de Lincoln, Paris, is in charge of the details. The total expense of the trip is 320 francs, or about $64. The expenses of thirteen members of the party are paid by endowments founded by some of the watering places or by physicians. One of the endowments requires its four beneficiaries to be an English, an Italian and a Danish physician, and a medical student from Lyons. The scientific features of the trip are in the hands of Professor Landouzy of Paris. The V. E. M. (voyage des études médicales) has become a very popular annual institution.

Bad English Meat.—The agitation concerning the meat packing industry in America has led to careful examination of food conditions in Great Britain, and the results promise to be the starting point for many reforms. One health officer, Dr. Thresh, went so far as to state that less attention is paid to food inspection in Great Britain than in any civilized country. He said that Great Britain should remove the beam from her own eye before attempting to remove the mote from her brother's eye, and declared that the worst food found in England is prepared in England itself. Dr. Thomas, the medical officer of the borough of Stepney, is said to have stated that during the past five years his department has destroyed over a ton of rotten tinned food daily, consisting not of American goods, but of colonial meats, fish and fruits. Dr. Cooper, M. P., chairman of the public health committee, says that there is a large traffic in dying and diseased cattle which are slaughtered and sold for food, many dealers being solely engaged in buying for slaughter animals which are about to die and which are hurried to the market without hindrance from inspectors.

The Vivisection Question in Great Britain.—Once again the battle rages around the question of vivisection in Great Britain, and the leaders of the opposing sides are engaged in heated discussion. Undoubtedly, the leaders of the antivivisection movement are faddists, writes an occasional correspondent of THE JOURNAL, some of whom are well-meaning, but ignorant, while others are of the notoriety-seeking type. Unfortunately, the present government, composed as it is of advanced radicals and swayed by the labor party, who know little and care less about science, are only too ready to lend a willing ear to the opponents of vivisection. It is announced that it is the intention of the government to recommend the appointment of a royal commission "to examine the work of the 'Cruelty to Animals' act in the light of present scientific knowledge." Sir Victor Horsley, in some comments made recently on the proposed action of the government, welcomed its decision. He pointed out that the previous royal commission, which investigated the subject reported in 1876 that there had been no cases of unnecessary cruelty, but in view of the possibility of such cases arising, recommended legislation, which was subsequently enacted.

Occupation Affections.—The congress for study of industrial diseases and occupation affections, recently held at Milan, was mentioned in these columns on page 1940 of the last volume. The advantages of international discussion of the topics involved were realized to such an extent that before the congress adjourned a permanent international committee was appointed to study ways and means for prevention of disease and of disability from the conditions of labor. The central office of the committee will be at Milan for the present. Each of the nations participating in the congress has a representative on the committee, and the other nations will be urged to appoint representatives. This committee will have in charge the organization of the next congress, which will be held in 1908 at some place yet to be determined. An article on the subject in the *Lancet* for June 23, takes as its text Ruskin's words, "There is no joy in modern labor," and concludes by quoting an Italian correspondent to the effect that in this congress "state medicine has made a notable and most promising start, in an international sense, with every prospect of revolutionizing the conditions of labor in the best interests of employers as well as of the employed."

Successful Immunization by the Mouth Against Tuberculosis.—The meeting of the French Académie des Sciences on June 11 was marked by an interesting communication from Calmette and Guérin on effectual immunization against tuberculosis. Their researches have established that bovine tubercle bacilli killed by being boiled for five minutes or heated for five minutes to 70 C. and fed to calves in the dose of 0.05 gm. and 0.25 gm., with an interval of forty-five days, immunized the animals to such an extent that they could bear without infection the ingestion of 0.05 gm. of fresh bovine tubercle bacilli—an amount certain to cause infection in the controls. Their experiments amply confirmed the fact that this method was effectual and induced complete immunity after four months, although the duration of the immunity conferred is not yet known. This method is far more convenient than von Behring's technic of intravenous injection of human tubercle bacilli. They further affirmed that they believe it to be possible to confer immunity on infants by having the infants ingest a small quantity of mixed human and bovine tubercle bacilli, killed or modified, the interval between the doses and other conditions approximately the same as in their animal experiments. It would be necessary, however, to protect the infants absolutely against tuberculous infection for four months at least afterward. This would necessitate the creation of special "nurseries" for such infants, particularly for the newly born children of tuberculous parents. By this means it may prove possible to rear a race refractory to tuberculosis. Roux supplemented this communication with a report of work along similar lines at Alfort, which confirms most strikingly Calmette's conclusions. All these investigators found that tubercle bacilli killed by heat or otherwise modified seem to pass through the intestinal walls as readily as living bacilli, and are found later in the mesenteric glands and even in the lungs. Calmette's previous research has shown that living bacilli ingested can make their way to the lungs through the mesenteric glands without leaving traces of their passage in the latter.

Hospital and Dispensary Abuse by the Well-to-Do.—This subject is the first one that is to be discussed at the Second Belgian Congress of Professional Medicine, which meets at Ghent July 15. In connection with its appeal to physicians in general to come to the congress, the *Gazette Méd. Belge* reproduces a stirring article on hospital abuse from one of the Paris dailies. The lay press has hitherto avoided this subject or has merely touched on it with some sarcastic fling at the doctors, who thus lose patients. But the article in question deals some telling blows in the right quarter. It is entitled "Stealing from the Poor," and relates how the poor have to be turned away from the overcrowded hospitals because the beds are occupied by well-to-do persons who could well afford to pay for medical attendance and care, but who are willing to sponge on the taxpayers and steal away from the poor the right to treatment, attention and care in the public hospitals. The article gives particulars, a detective having evidently been set to work in certain hospitals and clinics. In the service of Professor Lermoyez, for instance, applicant No. 17,127 was found to be the proprietor of a large hotel in a northern county. He had come to Paris with his wife to do shopping and attend the theaters, and had seized the opportunity to have a mild, chronic affection of the throat treated free by the Paris specialist. No. 16,780 was a fashionable hairdresser, who had come for treatment, as he had broken his nose playing polo. Another applicant complained because Professor Lermoyez happened to be substituted by his assistant. He had been under treatment for deafness before he went to a watering place for the summer, and now on his return he wanted the treatment continued. He sought out the professor at his home to complain of his substitute, when the above particulars were learned. Two instances in the same hospital were discovered in which retired merchants, living on their incomes, were occupying beds, dressed as workingmen. In another instance a well-to-do woman from a country town had come up to Paris to have her daughter treated in the public hospital. The couple were visiting a relative and the daughter applied to the hospital dressed in the clothes of the

relative's housemaid. The article closes with an eloquent plea that the public hospitals are for the poor and for the poor alone. If persons able to pay are admitted to the public hospitals it is treason all around, treason to the taxpayers, treason to physicians in general and to the local physicians in particular. "Stealing from the poor," it adds, "is the worst of all ignominies, *c'est un crime de lèse-pitié!*"

Contaminated Milk Supply in Great Britain.—Throughout Great Britain the utmost indignation has been manifested at the so-called revelations of the methods employed in the Chicago canning establishments. Perhaps the British people are somewhat too ready to observe the mote in the eye of their neighbor and too apt to disregard the beam in their own eye. Certain it is that the conditions ruling the milk supply of the United Kingdom are, to put the situation as mildly as possible, susceptible of considerable improvement. The entire system in regard to milk is at fault, and Great Britain has much to learn from the United States in this respect. The contention is not advanced that the methods governing the milk supply with us are perfect; but there is little doubt that comparisons made between the methods in vogue in Great Britain and here would be greatly in favor of the former country. It is unnecessary to dwell at length on the danger to public health from an impure milk supply. Attention may be directed, however, to the obvious fact that such milk is a fertile, perhaps the most fruitful, cause of infantile mortality, a statement emphasized by the most recent reports dealing with the death rate of infants in Great Britain. Many serious epidemics have been traced to milk. Impure milk, if not the *fons et origo* of all the physical ills to which infantile human flesh is heir, is at any rate an important factor in the causation and dissemination of such ills. It may be regarded, indeed,as an axiom that a pure milk supply is a necessity if infants, who are fed on it, are to be reared in health. In order to obtain pure milk, in the first instance the source of supply must be above suspicion, and the inhabitants of London seem to be awakening to the fact that the source of supply of much of the milk retailed to them will not bear investigation. The London *Daily Chronicle*, one of the most influential journals of the country, has taken up the matter recently, and has given details in connection with the London milk supply which afford interesting reading and which should tend to open the eyes of Londoners to the menace of impure milk. A large proportion of the milk used in London, of course, has to be sent some distance, and is subject to no control by the metropolitan authorities, while over the circumstances in which the great bulk of this milk is produced, the local authority has no control whatever. The supervision of country milk dairy farms in England seems to be notoriously lax, and in many districts non-existent. In consequence, most insanitary conditions prevail. Again, the milk is frequently conveyed by train long distances, the time taken in transit sometimes reaching ten or twelve hours; and during this time the milk is exposed to extreme variations of temperature. Milk in London is largely sold by small retailers, who take no precautions to prevent contamination of the product. According to the *Daily Chronicle*, "much of the milk retailed in the poorest quarters is kept in open pans in badly arranged and unsuitable shops where a mixed trade is done in paraffin and firewood, in dried fish and mixed groceries. The dust of the shop and the street pollutes it, flies poison it, every time the dipper is used the mixture becomes more dirty, and often it has stood for hours in this way, the residue incredibly filthy." It must not be forgotten that ice is practically unknown in the large English cities, and that only in the very largest and most up-to-date dairies is it used at all. On the whole, it would certainly seem that there is room for much improvement in the conditions regulating the milk supply of Great Britain.

LONDON LETTER.

Shrewd Precaution by a Doctor in a Case of Suspected Arsenical Poisoning: Testing the Finger Nails.

The exhumation of the body of a woman who died at Cardiff two months ago who is suspected to have been poisoned with arsenic, took place as the result of a new toxicologic method of investigation pursued by Dr. Rhys Jones. It is well known that arsenic is deposited in epidermal structures—epidermis, hair and nails. Before the burial of the woman the doctor had his suspicions aroused as to arsenical poisoning and took the precaution of paring her nails and submitted them to analysis, with the result that arsenic was found. Two months after death the body was disinterred and found in a remarkably good state of preservation, which confirms the suspicions. Traces of arsenic were found in the viscera, which have been sent to government experts for further analysis. No signs of disease sufficient to cause death were found. So far there is no evidence of foul play and the beer and spirits of the locality have been searched for arsenic without result.

The Tinned Meat Scandals.

The attention directed to food supply, and to tinned meat particularly, has caused investigation of English private slaughter houses, where conditions are far from cleanly. The health committee of the London City Council has recommended food inspection stations and public slaughter houses in London and inspection of food entering London. Though this may be an echo of the Chicago scandals, it has long been recognized by the council that the inspection of food entering the metropolis is not what it ought to be. This is mainly because the greatest city in the world has not for this purpose one area, but 29 areas, all under separate administrative control. In the provision of public slaughter houses England is far behind most continental nations. Many of the old private slaughter houses are near inhabited dwellings, and in some there is no entrance for the cattle except the shop where the meat is sold. The main object now is the abolition of the private slaughter house and the compulsory use of the abattoir to simplify inspection and to make it more effective. There are now in London 318 slaughter houses.

Poisonous Postage Stamps.

The discovery of unsuspected sources of injury and particularly of poisoning lurking in the use of all sorts of ordinary articles, has always been a specialty of the *Lancet*. The latest "find" is the discovery that the three-penny postage stamp contains a poisonous salt of lead. In sending out parcels of its special Hospital Sunday Supplement our contemporary was struck with the brilliancy of the yellow coloring used in the stamp, and was somewhat startled to find that this was due to chromate of lead (chrome yellow). Moreover, the amount was not negligible. Each stamp weighs rather more than half a grain and contains 2.53 per cent. of the chromate. Thus 70 stamps would contain one grain. Cases are recorded of fatal poisoning by very small doses of this salt. As little as one-fifth of a grain proved fatal to two children, who sucked the coloring from pastry adorned with ornaments containing chromate of lead. Thus this fatal dose would be contained in 14 stamps, and the process of licking stamps before affixing them might be attended with serious consequences. The *Lancet* commends these facts to the postmaster general, and suggests that if a yellow coloring must be used some innocent dye should be found among the numerous aniline yellows.

National Conference on Infantile Mortality.

Under the presidency of Mr. John Burns, president of the local government board, a national conference on infantile mortality has been held. Representatives of 105 municipal boroughs, 13 county authorities and 15 other bodies and 73 official members attended. Altogether the members of the congress numbered between 400 and 500. Mr. Burns welcomed the members and expressed sympathy with their aims. He expected, he said, from its discussions and the consequent education and enlightenment of the public greater results in the reduction of infantile mortality than anything which his department could immediately do or legislative help could produce. Roughly speaking, he said, 100,000 infant lives are being sacrificed every year to neglect, carelessness, thoughtlessness and ignorance. In the first year of infant life there are as many deaths as in all the other years together up to the age of 18. The part which environment plays in infantile mortality was shown by the fact that the rate in the poorer districts is sometimes as much as ten or twenty times greater than in the richer. The average expectation of life among engineers during the past fifty years has been increased by from ten to 12 years, but during the same period the infantile mortality has been practically stationary. Mr. Burns said that he thought that he saw signs that the end of the evil had been reached and that the result of the congress should be to bring down the infantile mortality in the next five or ten years by 30 per cent. or more. He said that he believed that half of the infantile deaths are preventable, and strongly deprecated married women working outside their homes.

Mr. Troutbeck and Postmortem Examinations.

Coroner Troutbeck has aroused great resentment in the profession by calling in an expert to perform postmortem examinations in most of his cases, instead of ordering the local physician to do it, as was the custom previously in his district of Southwest London and is still the practice throughout the coun-

try. As stated previously in THE JOURNAL, the subject has been taken up by the British Medical Association, which appointed a committee that condemned the course adopted by Mr. Troutbeck, and even petitioned the Lord Chancellor on the subject. The principal point was that the clinical evidence of the local physician who saw the patient during life should not be ignored. To this Mr. Troutbeck replied that he always called the physician if he could give any evidence of importance, but that in most of the cases in which an inquest was held there was no clinical evidence of any value. At the medicolegal society Mr. Troutbeck read a paper on the "Present Method of Ascertaining the Fact and Cause of Death." At one time, he said, the only postmortem examination was the viewing of the body by the jury. That useless practice has been superseded by the power conferred on the coroner to order a postmortem examination. This is usually conducted by the practitioner who attended during the last illness of the deceased. It is often perfunctorily performed and of little value. Despite a good deal of opposition, Mr. Troutbeck said, the coroner's right to call on some other person to make the postmortem examination has now been established. There are very good reasons, he stated, why the medical practitioner in attendance should not make it. In the first place, often he is not in a position of independence; there is always an inducement for him to make the results of his postmortem examination conform to his diagnosis and treatment of the case. In the second place, being a surgeon, and having other work which would be interfered with by making necropsies, he is sometimes unwilling to perform them; and sometimes he is not competent. Another reason for the independent examination by an official pathologist is indicated by the new rule now made by the local government board, that in cases of violent or unnatural death in prisons the postmortem examination must not be made by the prison physician. Finally, there is a great advantage to science and to the community from the appointment of a body of men whose duties would be definite and specific, and whose work would, in time, result in the establishment of a new and invaluable school of forensic medicine.

VIENNA LETTER.

Removal of Half of the Intestine for a Neoplasm.

A case which is probably unique on account of the length of the resected gut was demonstrated recently by Dr. Lorenz at the Vienna clinical society. A man in the prime of age complained of a swelling in the abdomen and a movable tumor was palpated. The tumor proved to be a mass of mesenteric carcinomatous glands. The primary seat of the neoplasm was the cecum. The metastatic growths had bound the omentum and the parietal membranes to two distant loops of the jejunum, so that extensive resection was deemed necessary, as the mesentery affected could not be freed from the growth. Before resecting the intestine the length of the affected part was measured, to see whether operation was possible. It was found that about 3 meters of the small intestine would remain in the abdomen, while 3 inches of the jejunum and ileum and 1.5 meters of the colon and cecum to the hepatic flexure would have to be removed. After consultation, it was decided to proceed with the operation. The two stumps were united as usual, and Mikulicz tampon inserted. The patient sustained the shock very well and made a good recovery. At first he was troubled by hematemesis, which was soon controlled by ice and adrenalin; later, a slight attack of erysipelas did not stop the favorable progress. The function of the bowels was rather impaired at the beginning, copious watery stools weakening the patient, but great care and suitable diet soon brought about complete recovery, so that he has gained flesh and is better than before. The stools are now formed, come twice daily, and the man is able to work in spite of being minus half his bowels.

Damages for X-Ray Burns: Two Actions Against Doctors.

The courts have recently passed on two different cases awarding damages claimed by patients against their doctors. The first case was that of a public official who had suffered for a long time from a very widespread psoriasis, and who consulted an eminent dermatologist. X-ray treatment was advised, and the patient submitted to it. This was in 1902, when the effects of the rays were not so well known as now. The patient sustained serious burns on the neck and back, which took over a year to heal, and incapacitated him from work. The action brought consequently against both specialists demanded $20,000 damages on the ground that the *x*-ray treatment was a mistake on account of the insufficiently known properties of such rays and because there are better and safer remedies known against psoriasis. As already mentioned in these columns, after a lengthy hearing, in which several experts from Germany were heard as witnesses, the judge found a verdict for the plaintiff and awarded him $6,000 damages and $800 costs, holding only the radiologist, Professor Holzknecht, responsible. The other defendant, a professor of dermatology, was acquitted because his advice was deemed justified. In the second case, a girl had been under treatment for psoriasis of the forehead, and another specialist had resorted to the *x*-rays, which he applied personally. Being called away urgently for a few minutes, his assisting nurse continued the exposure, but the patient developed bad sores on the face and brow, which healed very slowly and produced an ugly looking scar with the now well-known telangiectatic margin. The judge fined the physician $1,000 and decreed that he should pay an annuity of $120 until the girl married on account of the reduced "market value," the law stating that the master is responsible for the mistakes of his employés.

Pharmacology

PHENO-BROMATE.

CHARLES J. FOOTE, M.D.

NEW HAVEN, CONN.

The New Haven Medical Association is interested in the crusade against "patent medicines," and is anxious to take a hand in the exposure of the fraudulent claims of the many secret remedies placed before the physician with such alluring testimonials. Through its committee on "patent medicines" it has been investigating pheno-bromate. Inasmuch as the committee has never seen an analysis of pheno-bromate published, it sends one made by its chemist to THE JOURNAL of the American Medical Association.

YALE MEDICAL SCHOOL, NEW HAVEN, CONN., April 10, 1906.
Committee on Patent Medicines, New Haven Medical Association, New Haven, Conn.:

Gentlemen:—As requested by you, I have made an examination of the sample of pheno-bromate submitted to me for that purpose, and report as follows:

The package was marked "Sample package, Pheno-Bromate. The Pheno-Bromate Company, New York, U. S. A."

The box contained a number of tablets and a package of powders in papers marked, "Physicians 10 grain powders, pheno-bromate."

The substance in the papers was a white crystalline powder not homogeneous. It was completely soluble in hot water. The hot water solution on cooling yielded a mass of thin crystalline plates. This material was found to melt at 113.5 C. It gave no color with ferric chlorid and a positive isonitril test. The portion insoluble in ether amounted to 49.8 per cent. of the powder and consisted of potassium bromid. Quantitative determinations of potassium and bromin in the original solution confirmed this result.

In my opinion, the powder consists of approximately equal quantities of acetanilid and potassium bromid.

Qualitative tests of the tablets indicated that they had the same composition except for a small quantity of some incipient not entirely soluble in water. Yours truly,

HERBERT E. SMITH,
Chemist New Haven Medical Association.

The Pheno-Bromate Chemical Company issues a circular, from which I quote:

"Pheno-bromate is a synthetic combination of derivations of the phenetidin and bromide groups, and not as is the case with many analgesics and antipyretics, a mixture of various coal tar derivatives."

"It is entirely free from depressing effects upon the heart and circulation; never produces any objectionable by-or after effects, and has attained extensive employment as the safest and most reliable agent for prompt and complete relief of pain and reduction of abnormal temperature."

"The present popularity of Pheno-Bromate with the leading scientific physicians is, in a great measure, due to the fact that it possesses the advantages of absolute freedom from depressing effects upon the heart and circulation, which so often follow the employment of narcotics and coal tar products, superlative potency and uniform activity. Under the influence of pheno-bromate the heart acts regularly and systematically and the individual beats possess normal characteristics. Cyanosis, syncope, or collapse never follow its use."

"The remedy is by far the best and safest of all sedatives, and its routine and judicious employment will obviate the necessity of resorting to morphine and the hitherto unsafe and depressing coal tar products."

The doses recommended are as follows: As an antipyretic, 4 to 10 grains given at intervals of one to four hours; as an analgesic, the dose is from 10 to 25 grains, repeated in smaller doses two or three times during as many hours; as an antispasmodic, from 20 to 25 grains; as an hypnotic, 20 grains; as antineuralgic, 10 to 25 grains.

The dose recommended in most cases is about 20 grains, which is equivalent to 10 grains of acetanilid and 10 grains of potassium bromid. After using such a dose of acetanilid the

patient is apparently free from the "depressing effects on the heart and circulation which so often follow the employment of narcotics and coal-tar products."

In the back of the circular there are testimonials purporting to be from physicians. Let me quote a few:

"Pheno-bromate is all and more than represented. In forty-three years' practice I can truthfully state that nothing I have used compares favorably with it." DR. E. G. B.

"In fifteen grain doses pheno-bromate promptly relieves the pain of locomotor ataxia without unpleasant effect on the heart's action." DR. S. D. H.

"I have had very happy results from the use of pheno-bromate in typhoid fever, where I have been able to control the temperature much better than by the cold baths. I have found it a most excellent remedy in pneumonia, neuralgia, rheumatism and la grippe, and in no case has it depressed the heart's action in the least." DR. F. O. Y.

Pheno-bromate is furnished in ounce cartons at the price of $1 an ounce. Potassium bromid is now selling at 35 cents a pound, and acetanilid at 30 cents a pound. A mixture practically identical with pheno-bromate can be put up at a cost of 3 cents an ounce.

I trust the above analysis and quotations will throw sufficient light on the value of pheno-bromate as a heart tonic, and on the extreme philanthropy of the manufacturers in furnishing to the public such a valuable remedy at such a marvelously low price!

Societies Take Action.

BUNCOMBE COUNTY (N. C.) MEDICAL SOCIETY.

At a meeting of the Buncombe County (N. C.) Medical Society, held May 21, 1906, the following resolutions were adopted:

WHEREAS, It is the duty of every physician to guard the public health and to instruct the public in matters of hygiene and sanitation;

WHEREAS, The unrestricted manufacture and sale of secret "patented" and proprietary medicines, with their fraudulent claims, and the devices used in advertising the same are a menace to the public health.

WHEREAS, The American Medical Association, through its Council on Pharmacy and Chemistry, is making a heroic fight against the indecent, unscrupulous and avaricious system of prescribing, advertising and selling nostrums; therefore, be it

Resolved, That the Buncombe County Medical Society heartily approves of the work being done by the Committee on Pharmacy and Chemistry of the A. M. A., and the great educational campaign being carried on by the *Ladies' Home Journal*, *Collier's Weekly*, *Everybody's Magazine*, the *Druggists' Circular*, the *Farm Journal* and other lay publications, in their fight against the fraud and deception practiced in the manufacture and sale of secret remedies.

Resolved, That it condemns the slovenly, unscientific and stultifying practice of physicians prescribing or sanctioning the use of medicinal agents of whose formula and composition they are ignorant.

Resolved, That it deeply deplores and heartily condemns the methods employed by certain druggists in advertising, both in public places and in the press, secret remedies, for which unscientific and fraudulent claims are made, and who thus necessarily tend to encourage ignorance and deception, and that the society requests them to co-operate with the medical profession in their fight against the nostrum evil.

Resolved, That the society, in the interests of public health and common decency, recommends to the Board of Aldermen of the City of Asheville, the passage of such ordinances as will prohibit the indecent and fraudulent advertising of secret remedies on bill boards and in other public places; and also prohibit the distribution of free samples of secret and possibly poisonous preparations.

Resolved, That the proposed act to regulate the manufacture and sale of patent and proprietary medicines, as published in THE JOURNAL of the American Medical Association, Feb. 3, 1906, p. 374, meet with the hearty approval of this society, and the delegates of this society to the North Carolina State Medical Society are hereby instructed to have these resolutions read before that body, with the request that the Committee on Legislation make every effort to secure the passage of this, or some similar bill, by the State Legislature.

Resolved, That a special committee be appointed to continue in the interest of these resolutions, and to report to this Society, from time to time, as occasion may require.

Resolved, That a copy of these resolutions be sent to each member of this society; to each County Society of this State; to THE JOURNAL of the American Medical Association, and the above named lay periodicals; to each of the druggists of Buncombe County, N. C., and to the Board of Aldermen of the City of Asheville, N. C.

GAILLARD S. TENNENT, Secretary. H. H. BRIGGS,
LAURENCE E. HOLMES,
J. H. WILLIAMS.

NORTH CAROLINA STATE MEDICAL SOCIETY.

At its annual meeting the North Carolina State Medical Society adopted the resolutions passed by the Buncombe County Medical Society, with an amendment by Dr. Mason providing that the state society do all in its power to secure the passage of legislation at Raleigh in accordance with the provisions of the Buncombe County resolutions.

NEW MEXICO MEDICAL ASSOCIATION.

At the twenty-fifth annual meeting, held at Albuquerque, May 2-3, the following resolutions were adopted:

WHEREAS, Pharmacy should ever be the handmaid of medicine; and

WHEREAS, We realize the importance of the movement in favor of pure drugs and publicity in the composition of medicinal preparations; and,

WHEREAS, The great majority of nostrums now being exploited in medical journals and lay publications are sold by men who have no line of legitimate pharmaceuticals, but who confine their efforts to the manufacture of certain nostrums or the sale of such nostrums manufactured for them by the regular pharmaceutical houses; and,

WHEREAS, There seems to be a tendency among certain regular manufacturing pharmacists toward such exploitation in the making and placing on the market of nostrums under the head of specialties; now, therefore, be it.

Resolved, By the New Mexico Medical Association in its twenty-fifth annual session assembled, that it deplores and discountenances the exploitation and use of such nostrums as detrimental to the public health and fatal to the intimate and confidential and mutually helpful relations which should exist between the sister professions of medicine and pharmacy.

Resolved, That manufacturing pharmacists who have engaged to whatever extent in the making of nostrums are hereby requested to abandon such manufacture, either directly for their own trade, or for exploitation by others.

Resolved, That a copy of these resolutions be sent for publication to THE JOURNAL of the American Medical Association and to the *Pharmaceutical Era*.

Similar resolutions were passed by the Kansas State Medical Society at its annual meeting, held at Topeka, May 11, 1906, and by the Oklahoma State Medical Association at the annual meeting held at Guthrie. This Association also commended the work of THE JOURNAL of the A. M. A., the *Ladies' Home Journal*, *Collier's Weekly* and *Everybody's Magazine*.

VIGO COUNTY (IND.) MEDICAL SOCIETY.

At the regular meeting of this society held July 5, 1906, the following resolutions were adopted:

WHEREAS, It is the sense of the Vigo County Medical Society that the most efficient remedy for the growing evils of the "patent" and proprietary medicines lies in enlightening the profession and the laity as to their true nature, and,

WHEREAS, We believe that some reputable medical journals are still fostering the proprietaries of the nostrum type by giving them space in which to perpetrate their objectionable advertisements,

Resolved, That we commend the policy of THE JOURNAL of the American Medical Association in exposing the shams of the proprietary firms.

Resolved, That we congratulate *Collier's Weekly* and the *Ladies' Home Journal* on their successful efforts to get the intelligent people of this country to see the evils of "patent medicines."

Resolved, That as a component part of the Indiana State Medical Association we object to the use of the pages of our state journal, the *Indiana State Medical Journal*, in exploiting certain preparations which have been shown to be fraudulent and for which fraudulent claims are made.

CHURCH WANTS MEDICAL ADVERTISEMENTS BARRED.

By a large vote the United Presbyterian Assembly went on record May 23 against having medical advertisements of any kind appear in the *Christian Herald*, the official publication of the denomination.

One Newspaper Not Controlled.

Down in Louisiana there is a little town called Monroe. So far as we know there is nothing remarkable about it; it is just an ordinary town of between 5,000 and 6,000 inhabitants. It has a daily paper, called *The News*, which makes no pretensions of greatness or of any remarkable virtue, but it is evidently run by a man who has a conscience, who is independent, and who places honor and self-respect above the almighty dollar. Like many other newspapers, it derives not a little of its financial support from advertisements, but unlike many other newspapers, it does not allow its advertisers to run the paper and its editor. In its editorial department for May 26 are the following letters—it is the same old threat, of course—and the editor's comments:

TOLEDO, OHIO, May 22, 1906.

News, Monroe, La.

Gentlemen:—Should bills introduced by Senator Wingate and Representative Smith become laws they will force us to discontinue advertising in your state. Your prompt attention regarding these bills we believe would be of mutual benefit.

We would respectfully call attention to contract which we have with you at present. Respectfully,

CHENEY MEDICINE COMPANY.

DES MOINES, IOWA, May 23, 1906.

Editor of News, Monroe, La.

Dear Sir:—We learn that there are two bad bills before your General Assembly, viz.: Senate Bill No. 8 by Mr. Wingate, and a bill in the House of Representatives by Mr. Smith.

Each of these bills require the full formula on every bottle of patent medicine. If the manufacturers should publish their full

formulas any druggist could then make and sell their preparations, not only in Louisiana, but wherever the medicine was known and used.

You will see at once that the purpose of these bills is to kill the sale of all patent medicine in that state, as manufacturers will not publish their formulas.

These bills are the rankest class legislation and intended for the sole benefit of the medical profession. We are confident that you will object to their enactment, and if so kindly write the senator from your parish and ask him to oppose the enactment of Senate Bill No. 8, by Wingate.

You should also write to your representative to oppose the patent-medicine bill by Mr. Smith. Yours truly,

CHAMBERLAIN MEDICINE COMPANY.
By L. CHAMBERLAIN, Secretary.

THE EDITORIAL COMMENT.

Nay, Pauline, not if *The News* loses every patent medicine advertising contract it now has and never gets another; not even if the loss of the business brings the sheriff and *The News* goes under the hammer.

Indeed, *The News* thinks these bills are meritorious and in the interest of the public health, and instead of asking our senator and representatives to vote against them, will ask them to vote for them. They should also vote for a pure-food law.

The News does not think that all patent medicines are impure, bad and injurious, but it is convinced by ample evidence that many are and the people should know the good from the bad—they should know what they swallow.

Many fake patent-medicine concerns are selling harmful, even poisonous nostrums, without conscience, unmindful and not caring about the fat graveyards they are making so long as the dollars pour into them, and the honest ones should welcome a law that will drive the dishonest ones out of business and safeguard and protect the lives of the people. It is the duty, the sacred duty, of the legislature to pass such a law. The value of patent medicine formulas can not be set up against the lives of the people. All of them put together is not worth the life of a single citizen of Louisiana.

Not on your lives, Messrs. Cheney Medicine Co. and Chamberlain Medicine Co.

Still Other Deaths from Kopp's Baby's Friend.

Dr. L. E. Siegelstein, Cleveland, coroner of Cuyahoga County, sends us a report of the following cases of poisoning from Kopp's Baby's Friend, which occurred in Cleveland, March 27, 1906, and April 3, 1905:

HISTORY OF RECENT CASE.

"For two nights prior to March 26, 1906, Irma, the two-months-old daughter of Mrs. Anna Vargo, an Austrian woman of average intelligence, residing at No. 35 Cumberland Street, Cleveland, had been unable to sleep. The child's mother knowing that Mrs. Leszak, a neighbor living in the same house, always kept in her apartments a preparation known as Kopp's Baby's Friend, borrowed some of it and gave the baby a teaspoonful at 7 p. m. She never dreamed that such a small quantity would harm her infant in any way, but almost immediately after being given the dose the baby shivered, sank into a deep sleep or stupor, from which she never revived. At 8 p. m. the mother became so alarmed at the long continued sleep of the baby and her looks and, being unable to rouse the child, took her to a doctor's office near by. The doctor was unable to revive the baby, which was taken back home by the mother. At 8:30 p. m., there being no change for the better in the baby's condition, the mother summoned the doctor, who came to the house at once. The doctor again departed without being able to bring the child out of the stupor. The baby's body was very cold. This condition continued until morning. The doctor called again in the morning. The baby was blue and her body was very cold. The doctor announced to the mother that the baby was dying and could not live more than an hour longer. The baby died at about 10 o'clock a. m. The doctor at once reported the case at my office, and I began my investigation.

HISTORY OF PREVIOUS CASE.

"I was greatly interested in this case because I had had an almost similar case in April, 1905:

"Mr. E. P. Swan, 1227 Lexington Avenue, Cleveland, had received a small vial of 'Kopp's Baby's Friend' by mail as a sample. Up until evening of April 3, 1905, his five-weeks-old baby had been in good health. At 8:30 p. m. on April 3 the baby was taken with colic. The father at once thought of the 'Kopp's Baby's Friend' sample, and gave the infant six drops of the preparation at that time. At 12:30 a. m. that same night he gave the baby three drops more. The baby sank into a comatose condition, with stertorous breathing, dilated pupils, and a bluish countenance or pallor. Early in the morning the alarmed parents summoned Dr. O. H. Boulee, who, after an examination, declared that the baby was evidently suffering from the effects of opium poisoning. He prescribed the usual antidote with negative result. He then left the house, and half an hour later the baby was dead.

THE CORONER'S EXPERIMENTS.

"After the death of Irma Vargo I requested the city chemist to make an analysis of 'Kopp's Baby's Friend,' but have not yet received his report.

[In THE JOURNAL, Nov. 25, 1905, we published a report of an analysis of this preparation. According to the analysis, "Kopp's Baby's Friend" contains in the 100 c.c. 0.0719 gm. morphin sulphate, approximately one-third of a grain in one fluid ounce.—ED.]

"In addition to taking testimony and investigating the case from all angles, I did some private experimental work with 'Kopp's Baby's Friend.' First, I gave a six-days-old puppy 30 drops of the preparation. The pup never awakened from the deep sleep that overcame him at once. I gave a two-weeks-old kitten 20 drops. She promptly went to sleep and slept four hours. The next day I gave her 30 drops, which put her to sleep forever. I also tried the preparation on two kitten of six weeks old. Each slept for from four to eight hours after doses of from 15 to 20 drops."

CORONER'S VERDICT.

The State of Ohio, Cuyahoga County, ss.

Be it Remembered, That on the 27th day of March, A.D., 1906, information was given to me, L. E. Siegelstein, M.D., Coroner of said County, that the dead body of a girl, supposed to have come to her death from violence, had been found at No. 35 Cumberland Street, in the City of Cleveland, Ohio, County aforesaid, on the 27th day of March, 1906.

I visited the place and found the said dead body at No. 35 Cumberland Street. After viewing the same, and inquiring into the circumstances that caused the death of the said person, I summoned the following persons, to-wit: Irma Leszak and Anna Vargo to appear before me at my office, County Morgue, 213 Lake Street, at 9 o'clock a. m. on the 3d days of April, 1906. In obedience to said summons, the said persons appeared, and were sworn by me as witnesses.

I then proceeded to inquire in what manner, and by whom, the said person came to her death. Their testimony was taken by me and reduced to writing, and subscribed to by the several witnesses, and the same is hereto attached, and fully appears; I having heard the testimony. I also carefully examined the said dead body on the 28th day of March, 1906, find as follows, to-wit:

I. L. E. Siegelstein, M.D., Coroner of said County, having diligently inquired, do true presentment make in what manner Irma Vargo, whose dead body was found by me at above place on the 28th day of March, 1906, came to her death. The said Irma Vargo, was single, about 2 months of age, a resident of Cleveland, Ohio, and a native of U. S. A., had hazel eyes, black hair, and fair complexion, and was about 29 inches in height, and of small weight.

Upon full inquiry concerning all the facts, I find that the said Irma Vargo came to her death, on the 27th day of March, 1906, at No. 35 Cumberland Street, situated in the City of Cleveland, County and State aforesaid, from Morphin Poisoning, caused by a teaspoonful of a preparation sold under the name of "Kopp's Baby's Friend," which the mother gave the said Irma Vargo about 6 p. m. on March 26, 1906. (Seal.) L. E. SIEGELSTEIN, M.D., Coroner.

Distribution of Medicine Samples in Fort Wayne.

An ordinance has been adopted in Fort Wayne forbidding the distribution of samples of "patent medicines," pills, pellets or ointments without a license from the city controller. The ordinance was drafted at the request of many citizens whose children are daily endangered by the indiscriminate distribution of "patent medicines" on doorsteps. Children frequently find and eat these preparations and many narrow escapes from death have been reported. The ordinance provides that before any license shall be issued the drugs or samples shall be approved by the secretary of the board of health, and that the distributor shall put up a bond of $2,500 to guarantee the people against damages. A fine of $25 or imprisonment for thirty days, or both, are imposed for violation of the ordinance.

Druggists and Physicians.

In commenting on the position of the druggists in the present antinostrum campaign, the *Druggists' Circular*, July, 1906, makes the following pertinent statements:

So long as doctors are "easy," and so long as there is money in selling nostrums, druggists seem to think that it is all right for them to conduct a "scientific" prescription department in the rear of the store for the doctors and a "commercial," "patent-medicine" bazaar out in front for the physicians' patrons. But doctors are not as "easy" now as they have been. Some of them never have been heartily in favor of sending their patients to the nostrum bazaars for their medicines, and so have quietly taken to dispensing; and others of them are now taking an active part in the crusade against fraud and deceit of a medicinal nature, and are passing resolutions at their county, state and national meetings calling on druggists to withdraw their active support of the medicine fakirs. The lines are tightening and the druggists will soon have to choose whom they will serve—the medical profession or the medical frauds. The day is coming when they can not serve both, and the indications are that the druggists' minds are made up as to whether they will keep with the respectable crowd or go over to the anything-for-the-money gang.

Correspondence

"A (Not) New Method of Mounting Museum Preparations."

BOSTON, July 3, 1906.

To the Editor:—So much has been said concerning the priority of originating the gelatin method for the preservation of tissues that a short note may not be inappropriate at this time. This seems particularly opportune because in THE JOURNAL, June 30, 1906, is an article by Dr. Henry Albert entitled "A New Method of Mounting Museum Preparations." In this article, as in the one that appeared nearly two years ago (Aug. 13, 1904), by Dr. W. M. L. Coplin, no attention was given to the first demonstration of this method, or to the originators of that method.

Dr. Albert says that about four years ago he conceived the idea of using gelatin as a medium. Now, if Dr. Albert, or any one else interested, will refer to THE JOURNAL during 1902, in which a pathologic exhibit is reported, he will find that at the Saratoga session of the American Medical Association, held in June, 1902, more than four years ago, Boston University School of Medicine made an exhibit of over eighty specimens prepared according to the gelatin method, and that this was the first time that such a method had ever been demonstrated or described. Or if he will refer to the *New York Medical Journal*, August, 1902, he will read a description of the method and the formulas essentially as given in his own article, as well as in the one by Dr. Coplin. In this article he will also find that the method was originated by Boston University in the spring of 1901, or more than five years ago.

As I have now had several years' experience with the gelatin method, and am assured that it is the best way yet known to preserve animal tissues (and possibly vegetable ones as well), I am desirous that the credit for its origination should go to that institution to which it is due. And as an evidence that others share this same feeling concerning the value of the method may be cited the following: At the Boston session of the American Medical Association the entire pathologic collections exhibited by Harvard, Boston University, Tufts and a large part of that exhibited by Jefferson, as well as smaller collections, were prepared according to this method.

W. H. WATTERS, Professor of Pathology.

Medical Legislation

THE PURE FOOD BILL.

The following is the text of the Pure Food Bill as it was finally adopted in both houses of Congress on the recommendation of the Conference Committee:

"*An Act preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating the foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes.*

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:*

[Public—No. 384.]

"That it shall be unlawful for any person to manufacture within any territory or the District of Columbia any article of food or drug which is adulterated or misbranded, within the meaning of this act; and any person who shall violate any of the provisions of this section shall be guilty of a misdemeanor, and for each offense shall, upon conviction thereof, be fined not to exceed $500 or shall be sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court, and for each subsequent offense and conviction thereof shall be fined not less than $1,000 or sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court.

"SEC. 2. That the introduction into any state or territory or the District of Columbia from any other state or territory or the District of Columbia, or from any foreign country, or shipment to any foreign country of any article of food or drugs which is adulterated or misbranded, within the meaning of this act, is hereby prohibited; and any person who shall ship or deliver for shipment from any state or territory or the District of Columbia to any other state or territory or the District of Columbia, or to a foreign country, or who shall receive in any state or territory or the District of Columbia from any other state or territory or the District of Columbia, or foreign country, and having so received, shall deliver, in original unbroken packages, for pay or otherwise, or offer to deliver to any other person, any such article so adulterated or misbranded within the meaning of this act, or any person who shall sell or offer for sale in the District of Columbia or the territories of the United States any such adulterated or misbranded foods or drugs, or export or offer to export the same to any foreign country, shall be guilty of a misdemeanor, and for such offense be fined not exceeding two hundred dollars for the first offense, and upon conviction for each subsequent offense not exceeding three hundred dollars or be imprisoned not exceeding one year, or both, in the discretion of the court: *Provided*, That no article shall be deemed misbranded or adulterated within the provisions of this act when intended for export to any foreign country and prepared or packed according to the specifications or direction of the foreign purchaser when no substance is used in the preparation or packing thereof in conflict with the laws of the foreign country to consumption, then this proviso shall not exempt said article shall be in fact sold or offered for sale for domestic use or consumption, then this proviso shall not exempt said article from the operation of any of the other provisions of this act.

"SEC. 3. That the Secretary of the Treasury, the Secretary of Agriculture, and the Secretary of Commerce and Labor shall make uniform rules and regulations for carrying out the provisions of this act, including the collection and examination of specimens of foods and drugs manufactured or offered for sale in the District of Columbia, or in any territory of the United States, or which shall be offered for sale in unbroken packages in any state other than that in which they shall have been respectively manufactured or produced, or which shall be received from any foreign country, or intended for shipment to any foreign country, or which may be submitted for examination by the chief health, food, or drug officer of any state, territory, or the District of Columbia, or at any domestic or foreign port through which such product is offered for interstate commerce or for export or import between the United States and any foreign port or country.

"SEC. 4. That the examinations of specimens of foods and drugs shall be made in the Bureau of Chemistry of the Department of Agriculture, or under the direction and supervision of such bureau, for the purpose of determining from such examinations whether such articles are adulterated or misbranded within the meaning of this act; and if it shall appear from any such examination that any of such specimens is adulterated or misbranded within the meaning of this act, the Secretary of Agriculture shall cause notice thereof to be given to the party from whom such sample was obtained. Any party so notified shall be given an opportunity to be heard, under such rules and regulations as may be prescribed as aforesaid, and if it appears that any of the provisions of this act have been violated by such party, then the Secretary of Agriculture shall at once certify the facts to the proper United States district attorney, with a copy of the results of the analysis or the examination of such article duly authenticated by the analyst or officer making such examination, under the oath of such officer. After judgment of the court, notice shall be given by publication in such manner as may be prescribed by the rules and regulations aforesaid.

"SEC. 5. That it shall be the duty of each district attorney to whom the Secretary of Agriculture shall report any violation of this act, or to whom any health or food or drug officer or agent of any state, territory, or the District of Columbia shall present satisfactory evidence of any such violation, to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the United States, without delay, for the enforcement of the penalties as in such case herein provided.

"SEC. 6. That the term 'drug,' as used in this act, shall include all medicines and preparations recognized in the United States Pharmacopeia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation, or prevention of disease of either man or other animals. The term 'food,' as used herein, shall include all articles used for food, drink, confectionery, or condiment by man or other animals, whether simple, mixed, or compound.

"SEC. 7. That for the purposes of this act an article shall be deemed to be adulterated—

"*In case of drugs:*

"First, If, when a drug is sold under or by a name recognized in the United States Pharmacopeia or National Formulary, it differs from the standard of strength, quality, or purity, as determined by the test laid down in the United States Phar

macopeia or National Formulary official at the time of investigation: *Provided*, That no drug defined in the United States Pharmacopeia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality, or purity be plainly stated upon the bottle, box, or other container thereof, although the standard may differ from that determined by the test laid down in the United States Pharmacopeia or National Formulary.

"Second. If its strength or purity fall below the professed standard or quality under which it is sold.

"*In the case of confectionery:*

"If it contains terra alba, barytes, tale, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt, or spirituous liquor or compound or narcotic drug.

"*In the case of food:*

"First. If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

"Second. If any substance has been substituted wholly or in part for the article.

"Third. If any valuable constituent of the article has been wholly or in part abstracted.

"Fourth. If it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.

"Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health: *Provided*, That when in the preparation of food products for shipment they are preserved by any external application applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or the package, the provisions of this act shall be construed as applying only when said products are ready for consumption.

"Sixth. If it consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter.

"SEC. 8. That the term 'misbranded,' as used herein, shall apply to all drugs, or articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design, or device regarding such article, or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the state, territory, or country in which it is manufactured or produced.

"That for the purposes of this act an article shall also be deemed to be misbranded:

"*In case of drugs:*

"First. If it be an imitation of or offered for sale under the name of another article.

"Second. If the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphin, opium, cocain, heroin, alpha or beta eucain, chloroform, cannabis indica, chloral hydrate, or acetanilid, or any derivative or preparation of any such substances contained therein.

"*In the case of food:*

"First. If it be an imitation of or offered for sale under the distinctive name of another article.

"Second. If it be labeled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed in whole or in part and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any morphin, opium, cocain, heroin, alpha or beta eucain, chloroform, cannabis indica, chloral hydrate, or acetanilid, or any derivative or preparation of any of such substances contained therein.

"Third. If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package.

"Fourth. If the package containing it or its label shall bear any statement, design, or device regarding the ingredients or the substances contained therein, which statement, design, or device shall be false or misleading in any particular: *Provided*, That an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

"First. In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced.

"Second. In the case of articles labeled, branded, or tagged so as to plainly indicate that they are compounds, imitations, or blends, and the word 'compound,' 'imitation,' or 'blend,' as the case may be, is plainly stated on the package in which it is offered for sale: *Provided*, That the term 'blend' as used herein shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only: *and Provided further*, That nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredients to disclose their trade formulas, except in so far as the provisions of this act may require to secure freedom from adulteration or misbranding.

"SEC. 9. That no dealer shall be prosecuted under the provisions of this act when he can establish a guaranty signed by the wholesaler, jobber, manufacturer or other party residing in the United States, from whom he purchases such articles, to the effect that the same is not adulterated or misbranded within the meaning of this act, designating it. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of such articles to such dealer, and in such case said party or parties shall be amenable to the prosecution, fines and other penalties which would attach, in due course, to the dealer under the provisions of this act.

"SEC. 10. That any article of food, drug or liquor that is adulterated or misbranded within the meaning of this act, and is being transported from one state, territory, district or insular possession to another for sale, or, having been transported, remains unloaded, unsold or in original unbroken packages, or if it be sold or offered for sale in the District of Columbia or the territories or insular possessions of the United States, or if it be imported from a foreign country for sale, or if it is intended for export to a foreign country, shall be liable to be proceeded against in any district court of the United States within the district where the same is found, and seized for confiscation by a process of libel for condemnation. And if such article is condemned as being adulterated or misbranded, or of a poisonous or deleterious character, within the meaning of this act, the same shall be disposed of by destruction or sale, as the said court may direct, and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the treasury of the United States, but such goods shall not be sold in any jurisdiction contrary to the provisions of this act or the laws of that jurisdiction: *Provided, however*, That upon the payment of the costs of such libel proceedings and the execution and delivery of a good and sufficient bond to the effect that such articles shall not be sold or otherwise disposed of contrary to the provisions of this act or the laws of any state, territory, district or insular possession, the court may by order direct that such articles be delivered to the owner thereof. The proceedings of such libel cases shall conform, as near as may be, to the proceedings in admiralty, except that either party may demand trial by jury of any issue of fact joined in any such case, and all such proceedings shall be at the suit of and in the name of the United States.

"SEC. 11. The Secretary of the Treasury shall deliver to the Secretary of Agriculture, upon his request, from time to time, samples of foods and drugs which are being imported into the United States or offered for import, giving notice thereof to the owner or consignee, who may appear before the Secretary of Agriculture and have the right to introduce testimony, and if it appear from the examination of such samples that any article of food or drug offered to be imported into the United States is adulterated or misbranded within the meaning of this act, or is otherwise dangerous to the health of the people of the United States, or is of a kind forbidden entry into, or forbidden to be sold or restricted in sale in the country in which it is made or from which it is exported, or is otherwise falsely labeled in any respect, the said article shall be refused admission, and the Secretary of the Treasury shall refuse delivery to the consignee and shall cause the destruction of any goods refused delivery which shall not be exported by the consignee within three months from the date of notice of such refusal under such regulations as the Secretary of the Treasury may prescribe: *Provided*, That the Secretary of the Treasury may deliver to the consignee such goods pending examination and

decision in the matter on execution of a penal bond for the amount of the full invoice value of such goods, together with the duty thereon, and on refusal to return such goods for any cause to the custody of the Secretary of the Treasury, when demanded, for the purpose of excluding them from the country, or for any other purpose, said consignee shall forfeit the full amount of the bond: *and Provided, further*, That all charges for storage, cartage and labor on goods which are refused admission or delivery shall be paid by the owner or consignee, and in default of such payment shall constitute a lien against any future importation made by such owner or consignee.

"SEC. 12. That the term 'territory,' as used in this act, shall include the insular possessions of the United States. The word 'person,' as used in this act, shall be construed to import both the plural and the singular, as the case demands, and shall include corporations, companies, societies and associations. When construing and enforcing the provisions of this Act, the act, omission or failure of any officer, agent or other person acting for or employed by any corporation, company, society or association, within the scope of his employment or office, shall in every case be also deemed to be the act, omission or failure of such corporation, company, society or association as well as that of the person.

"SEC. 13. That this act shall be in force and effect from and after the first day of January, 1907."

Approved June 30, 1906.

Summary of Legislative Affairs at Close of Congress.

CINCINNATI, OHIO, July 1, 1906.

To the Members of the National Auxiliary Legislative Committee of the American Medical Association:

The adjournment of Congress affords a natural opportunity to thank you individually and in the aggregate for the great assistance that you have rendered in promoting national legislation of special interest to the medical profession.

THE PURE FOOD AND DRUG BILL A LAW.

The Pure Food and Drug Bill, which has been an object of solicitude by the entire medical profession for many years, is at last a law. This end has been reached largely through the influence that you have actively exerted either directly or through your neighbors, on your representatives in both branches of Congress. You will be interested to know that on the days when this bill came up for final consideration in the Senate, in February, and in the House, in June, the formal petition of the American Medical Association, accompanied by an official letter of transmittal, was delivered on the desk of each member of the respective houses. Now, however, that the long fight is ended it is incumbent on us to extend cordial recognition to those who espoused the interests of the people. You will, therefore, do a gracious act if you will write a letter of appreciation to Hon. W. B. Heyburn and to Hon. W. P. Hepburn, champions of the bill in the Senate and House, respectively, and to such of your representatives and senators as supported the measure on its passage.

STATUS OF THE ARMY MEDICAL BILL.

The Army Medical Reorganization Bill, passed the Senate early in the year, and, after considerable delay, was favorably reported from House Committee on Military Affairs, Mr. John A. T. Hull (Iowa), chairman. As the session just ended was drawing to a close many requests, some of them telegraphic, were sent by members of your committee to the Speaker, urging that the measure be given final consideration before adjournment. The Speaker stated, however, that at that late date it would be impracticable to issue a rule for its consideration, but promised to submit it to final vote early in the next session, which will begin the first of December of this year. The concession on the part of the Speaker is recognized as substantial progress. You are urged, however, to interview your representatives and to have others interview them personally during the present recess, requesting them to insist, through the committee on rules, on a prompt compliance on the part of the House with the foregoing promise of the Speaker.

THE PROPOSED DEPARTMENT OF PUBLIC HEALTH.

The representations made by you on behalf of the medical profession of your respective localities to the effect that there ought to be a department of public health at Washington, with representation in the Cabinet of the President, was formally approved by the National Legislative Council and the Committee on Medical Legislation in conference at Washington last January. The action was confirmed by the House of Delegates at Boston, in June, which directed that $1,000.00, or so much of it as might be required, be appropriated to defray the expenses of preparing a bill. The Section on Hygiene and Sanitary Science at the same session adopted the following:

WHEREAS, The rapidly increasing number and the scope of the sanitary problems constantly arising are of great importance to the growth and development of this country as well as its outlying dependencies; and

WHEREAS, Such problems require for their solution the most experienced and best trained sanitary talent, it follows that it is especially desirable that our Chief Executive have in his immediate presence a medical adviser, eminent and experienced in sanitary science, to counsel him at all times and thus lighten his responsibility in deciding on matters of far-reaching importance which so profoundly affect the lives and health of many millions of people for either good or ill; therefore, be it

Resolved, By the Section on Hygiene and Sanitary Science of the American Medical Association that we ask the House of Delegates to take immediate and appropriate action which may bring before the Congress of the United States, as a means of materially advancing the prosperity and well-being of this nation, the importance and necessity of creating a Department of Public Health, with a regularly educated physician as secretary in the Cabinet of the President.

Resolved, further, That the secretary of this section be authorized and directed to call the attention of all state boards and health commissioners of the larger American cities to the purport of these resolutions and to solicit their active co-operation to the end that suitable legislation may result in the furtherance of the object of the resolution.

It is expected that provisions in accordance with the foregoing action of the House of Delegates will be made so that the bill, properly prepared, can be introduced at the next session of Congress.

In the meantime, it is of the highest importance that you interview and have others interview members of the present Congress from your respective districts relative to this prospective measure and that you ascertain as definitely as possible the position on the question of all candidates for election to the next Congress, and that this be done before the nomination.

REMAINING MEDICAL LEGISLATION.

A number of other bills, all of them of importance, but all of them secondary to the measures before enumerated, were approved by the National Legislative Council and are pending in Congress. It may be said of them that they have made satisfactory progress. They have been made the subject of general referenda as occasion required. There is, however, at the present time no occasion to make them the subject of special referendum.

Again thanking the members of the National Auxiliary Legislative Committee for their cordial co-operation—a co-operation without which present results could not have been achieved, I have the honor to be, on behalf of the Committee on Medical Legislation,

Very sincerely,

CHARLES A. L. REED, Chairman.

Association News

NEW MEMBERS.

List of New Members of the American Medical Association for the Month of June, 1906.

Those whose names are transferred from the subscription list are indicated by daggers, those who joined at the Boston session and who were not already subscribers are indicated by stars.

ALABAMA.

*Coley, A. J., Alexander City.
†Bradford, Kenneth, Birmingham.
†Compton, W. W., Bessemer.
†Davis, J. D. S., Birmingham.
†Gunn, J. H., Calera.
Greene, J. B., Birmingham.
†Hutchinson, W. H., Childersburg.
†Head, W. C., Johns.
*Killough, J. N., Woodlawn.
Peterson, A. J., Goodwater.
†Powell, C. B., Hartford.
*Stabler, L. V., Thorsby.
*Sanders, W. B., Troy.
†Ward, W. R., Birmingham.
†Ward, E. B., Selma.

ARIZONA.

†Adams, C. B., Seligman.

ARKANSAS.

†Barlow, E. E., Dermott.
Easterling, W. W., Lake Village.
†Grant, R. L., Texarkana.
*Meriwether, C. P., Walnut Ridge.
†Rice, W. W., Prescott.
†Warren, Eugene, Hot Springs.

CALIFORNIA.

†Bennett, Laura B., San Pedro.
†Dudley, H. W., San Rafael.

†Fine, H. M., Oakland.
†Parker, A. S., Riverside.
†Schultz, M. A., Long Beach.
*Southard, W. F., San Francisco.
†Thomas, Benj., Palo Alto.
†Wimberly, G. W., Greenville.

COLORADO.

†Cuneo, Jos., Denver.
*Delehanty, Edw., Denver.
Raymond, E. L., New Windsor.
†Taussig, A. S., Denver.

CONNECTICUT.

†Bullard, M. J., Putnam.
†Foster, Dean, Stamford.
*Ferrin, C. F., New London.
†Gordon, W. F., Danbury.
Higgins, W. L., South Coventry.
Howe, H. H., Yantic.
†Hewes, F. W., Groton.
*Hyde, Harriet B., Greenwich.
*Judson, W. H., Danielson.
†O'Connell, T. S., East Hartford.
O'Hara, W. J. A., Bridgeport.
*Starr, R. S., Hartford.

DISTRICT OF COLUMBIA.

†Thomas, A. R., Washington.
†Taylor, L. H., Washington.

FLORIDA.

†Miller, O. J., Panama Park.

GEORGIA.

†Baird, J. M., Columbus.
†Curry, J. W., Rome.
†Hardin, L. S., Atlanta.
†Holmes, O. L., Covington.
*Pickett, F. B., Ty Ty.

ILLINOIS.

†Alrutz, L. F., Chicago.
†Allen, L. G., Litchfield.
†Barr, W. A., Chicago.
†Bley, George, Beardstown.
†Barclay, R. D., Cerra Gordo.
†Binney, R. W., Granite City.
†Converse, W. C., Chicago.
†Clemensen, P. C., Chicago.
Davis, J. H., Carlinville.
†Davis, E. E., Avon.
†Eberspacher, F. J., Pana.
†Gardner, J. L., Rochelle.
*Goodman, T. B., Cobden.
†Haughey, J. E., Rockford.
†Hawkey, W. G., Belvidere.
*Herriman, W. D., Chicago.
†Hopkins, C. W., Chicago.
Harrison, C. N., Chadwick.
†Kincaid, J. H., Chicago.
†Kimball, G. W., Steward.
†Lins, F. J., Durand.
†Lawrence, R. H., Chicago.
†Millbon, H. B., Owaneco.
Midgley, R. J., Wilmington.
†Menge, Fred'k, Chicago.
†McBride, W. O., Joliet.
†Pavlik, O. S., Chicago.
Seids, J. W., Annawan.
†Scott, W. P., Elliott.
†Sargent, Evlan, Moline.
†Tischart, P. J., Chicago.
†Wiley, F. A., Earlville.
†Whitaker, Hall, Mound City.

INDIANA.

*Butler, W. H., Columbus.
†Brodbeck, G. H., Roann.
†Fortune, J. L., Terre Haute.
†King, C. H., Wabash.
†Kirby, G. W., Millersburg.
†Lowder, Lillian C., Bloomington.
*Murphy, O. C., Scottsburg.
†McAlexander, R. O., Indianapolis.
*Newman, H. M., South Milford.
†Pulliam, J. M., Ft. Wayne.
†Rarick, J. E., Wolcottville.
†Schick, M. F., Ft. Wayne.
†Stunkard, T. C., Terre Haute.
*Turner, Harriet E., Indianapolis.
†Wilson, R. S., Berne.
Walden, C. H., New Market.

INDIAN TERRITORY.

*Whitaker, W. J., Pryor Creek.
†Webb, J. E., Tulsa.

IOWA.

†Armentrout, C. R., Keokuk.
†Croston, G. C., Lucas.
†Chatterton, A. S., Peterson.
*Donohoe, George, Independence.
†Everhart, R. E., Clinton.
†Graber, F. J., Stockport.
†Hearst, W. L., Cedar Falls.
†Howe, Lysle C., Leighton.
†Hoeve, H. H., Des Moines.
†Ingbert, C. E., Independence.
McCrea, Eppie S., Eddyville
†Patterson, W. E., Greene.
Prentice, G. L., Hinton.
†Sinning, Augustus, Bennett.
Strohbehn, E. F., Davenport.

KANSAS.

*Chase, A. B., Atchison.
†Fannon, Hubert, Bucklin.
Huffman, C. S., Columbus.
†Reding, H., Sabetha.
†Stockwell, L., Atchison.
*Trueheart, Marion, Sterling.
†Van Nuys, W. C., Topeka.

KENTUCKY.

†Anderson, D. B., Paris.
*Casper, M., Louisville.
†Guest, J. W., Louisville.
*Johnson, A. R., Henderson.
†Marshall, Ewing, Louisville.
Farris, R. C., Fredonia.
†Newcom, E. E., Repton.
*Neel, J. L., Drake.
†Perry, G. G., Richmond.
Chumbley, C. A., McGuffy.
†Petty, B. B., Cythiana.
†Reynolds, H. G., Paducah.
†Rash, O. W., Owensboro.
*Shelton, E. B., Blandville.
†Smiser, H. T., Cynthiana.
*Simmons, W. C., Smiths Grove.
†Tilton, R. J. R., Carlisle.
†Yancey, H. M., Carlisle.

LOUISIANA.

Teer, W. W., Coushatta.
†Vidrine, J. C., Ville Platte.
†Yearwood, J. G., Bayou La Chute.

MAINE.

†Cushman, B. G. W., Auburn.
Dascombe, L. A., Skowhegan.
†Fitzmaurice, T. J., Bangor.
*Millard, L. E., Saco.
*Mann, F. W., Houlton.
†Noyes, B. L., Stonington.
*Nichols, J. W., Farmington.
*Purinton, H. H., Lewiston.
*Swasey, W. B., Cornish.
*Sawyer, Alton, Gardiner.
*Thompson, J. F., Portland.
†Vaughan, P. H. S., Bangor.
†White, V. O., East Dixfield.
†Woodman, D. N., Yarmouth.
†Wakefield, F. S., Lewiston.
*Witherle, C. B., Portland.

MARYLAND.

*Baker, C. D., Rohrersville.
Clapp, C. A., Baltimore.
†Fahrney, H. P., Frederick City.
†Haffner, S. T., Frederick City.
†Herring, J. T., Westminster.
†Johnson, W. C., Frederick.
†Laughlin, Mary A., Hagerstown.
†McCurdy, I. J., Frederick.
†Mason, A. S., Hagerstown.
†Penning, O. P., Baltimore.
*Reik, J. N., Baltimore.
†Riley, W. T., Baltimore.
†Wells, George, Annapolis.
Welsh, Lilian, Baltimore.
†Wagaman, S. M., Hagerstown.
†Woodward, L. K., Westminster.

MASSACHUSETTS.

†Adams, C. W., Cambridge.
†Austin, A. E., Medway.
Averill, J. H., Campello.
*Allen, G. S., Lawrence.
*Andrus, H. V., Boston.
*Atwood, G. M., Haverhill.
*Alexander, T. B., Scituate.
†Bruce, J. A., Everett.
†Butler, G. E., Fall River.
†Buehler, G. V., Boston.
†Brady, F. R., Lowell.
†Brooks, Edith M., Roxbury.
†Bennett, H. P., Lynn.
†Balboni, G. M., Boston.
†Bailey, G. G., Ipswich.
†Breed, N. P., Lynn.
*Bufford, J. H., Dorchester.
*Burleigh, R. F., So. Braintree.
*Blodgett, J. H., Boston.
*Bryant, C. E., Hyde Park.
†Beach, S. J., Boston.
†Brown, Percy, Boston.
†Brigham, C. S., Leominster.
†Barnes, W. L., Lexington.
†Brackett, E. G., Boston.
†Brennan, T. J., Boston.
†Barrill, C. S., Boston.
†Borden, C. R. C., Boston.
†Bowles, G. H., Boston.
†Brainerd, J. B., Boston.
†Bateman, F. E., Somerville.
†Baker, C. M., Hyannis.
†Bosworth, F. D., Jr., Tewksbury.
*Boardman, W. S., Boston.
*Bean, J. W., West Medford.
*Bartlett, W. O., Roxbury.
*Bell, R. E., Lowell.
*Boyle, J. F., Lowell.
†Bullard, J. T., New Bedford.
†Brown, M. M., No. Adams.
*Barstow, H. T., Boston.
*Bryant, L. L., Cambridge.
†Costello, J. H., Dorchester.
†Cushing, A. A., Brookline.
†Cohan, F. H., Leominster.
†Crandell, A. R., Taunton.
†Caffrey, W. F., Westfield.
†Conro, A. C., East Longmeadow.
†Currie, J. Z., Cambridge.
†Carroll, T. F., Boston.
†Coolidge, J. N., Boston.
†Crosby, L. M., Boston.
†Collins, O. W., So. Framingham.
†Callahan, J. T., Woburn.
†Carruth, S. S., Dorchester.
*Crawford, Sarah M., Boston.
*Cushman, G. T., Boston.
*Cronin, M. J., Boston.
*Coburn, Fordyce, Lowell.
*Church, C. A., Millbury.
*Cushman, A. B., So. Dartmouth.
*Chase, H. L., Brookline.
*Cogswell, G. P., Cambridge.
*Cleary, James, Cambridge.
*Carvill, Lizzie M., Somerville.
*Callanan, S. A., Boston.
†Dutcher, W. A., Boston.
†Donoghue, D. F., Holyoke.
†Dana, H. W., Boston.
†Duff, John, Charlestown.
†Drew, Fred, Boston.
†Dexter, F. F., Granby.
*Dwyer, W. J., Cambridge.
*Dow, D. C., Cambridge.
*Dreyfus, Edna W., Brookline.
*Douglass, J. A., Amesbury.
*Davidson, H. D., Springfield.
*Dubois, E. C., Cambridge.
†Elsworth, S. W., Quincy.
†Eastman, T. J., Boston.
†Eaton, W. G., Lowell.
Eagan, J. J., Gloucester.
†England, A. C., Pittsfield.
*Emerson, G. E., Boston.
*Edson, P. O. M., Boston.
†Fischbein, Louis, Boston.
†Farmer, W. F., Holden.
†Fairing, J. W., Granville.
†Freedman, L. M., Boston.
*Ferguson, E. H., Boston.
*Farrington, L. M., Brookline.
*Fernald, C. A., Boston.
†George, A. P., Haverhill.
†Gilpatrick, R. H., Boston.
†Gage, J. A., Lowell.
†Gay, F. W., Malden.
Goodman, Samuel, Boston.
†Gallivan, W. J., So. Boston.
†Galligan, E. T., Boston.
†Gerstein, Maurice, Boston.
†Gilman, C. S., Boston.
†Grimes, Loring, Swampscott.
*Gay, W. F., Boston.
*Glass, James, So. Framingham.
*Goddard, S. W., Brockton.
*Grandison, W. G., Charlestown.
*Graves, W. P., Boston.
*Gage, E. F., Winthrop.
†Heaten, T. H., Cambridge.
†Heffernan, D. A., Boston.
†Harrison, Henry, Boston.
†Hinchliffe, Fred'k, Lowell.
†Howard, J. F., Lawrence.
Hutchinson, W. P., Abington.
†Hodgdon, A. H., Dedham.
*Hayes, F. L., Brookline.
*Hopkinson, George, Boston.
*Hurley, D. B., Boston.
*Harding, W. A., Everett.
†Johnstone, W. J., Boston.
Judkins, F. L., Lynn.
*Jones, G. W., Chelsea.
*Jackson, A. A., Everett.
*Joyce, J. H., Salem.
*Johnson, O. E., Winthrop.
†Kelley, M. J., Watertown.
†Kennedy A. G., Boston.
†Kidner, F. C., Boston.
*Kittredge, Jos., Brookline.
*Kingsbury, W. W., Malden.
*Kelley, J. H., Boston.
*Knight, C. S., Westboro.
*Kelly, W. D., Boston.
†Lowney, J. F., Fall River.
Lewis, E. S., Princeton.
†Legg, A. T., Boston.
†Lockary, J. L., Boston.
†Levins, N. N., Boston.
†Long, M. A., Manchester.
*Lawrence, A. A., Natick.
*Lane, J. W., Boston.
†Middleton, W. J., Quincy.
†McMurray, F. M., Fitchburg.
†Morse, V. H. C., Cambridge.
†McEvoy, G. A., Roxbury.
†Merriam, F. H., Holbrook.
McKenzie, J. R., Cambridge.
†Macdonald, C. W., Boston.
†Mitchell, Wm., Highlandville.
†Macdonald, W. G., Boston.
†Macdonald, A. A., Boston.
†McMichael, W. B., Boston.
†Morse, F. H., Boston.
*Miller, H. W., Taunton.
*McMann, W. H., Boston.
*Malone, Chas., Jamaica Plains.
*Miller, Vesta D., Needham.
*McKibben, W. W., Worcester.
*Mongan, C. E., Somerville.
*McLennan, Roderick, Quincy.
*McAllister, J. J. H., New Bedford.
*Mendelsohn, Louis, Dorchester.
*Meader, C. E., Lynn.
*Magee, J. A., Lawrence.
*Martin, Miles, Boston.
Marion, O. H., Boston.
*Mangan, J. J., Lynn.
*McMillan, A. L., Hanover.
*Murphy, F. C., Boston.
*Morse, A. G., Hingham.
*Murphy, T. J., Boston.
*Myers, E. E., Boston.
*McCormick, T. J., Boston.
*Madden, Wm., Boston.
*McCarthy, T. F., E. Boston.
*Nason, O. C. B., Medway.
†Newhall, A. R., Holliston.
*Norris, Albert Lane, Cambridge.
†O'Connor, J. E., Fall River.
†O'Hearn, D. A., Lowell.
†Orton, S. T., Boston.
*Oak, C. A., Revere.
†Phippen, Hardy, Salem.
†Prescott, C. D., New Bedford.
†Pitta, Joas C. da S., New Bedford.
†Pothier, J. C., New Bedford.
Plummer, F. W., Malden.
†Piper, Frank, Boston.
†Peterson, C. S. B., New Bedford.
*Provan, Robert, Boston.
*Plimpton, L. H., Norwood.
*Parker, A. M., Boston.
*Porter, W. T., Boston.
*Parks, J. W., E. Boston.
†Robbins, W. R., Boston.
†Rushford, E. A., Salem.
Round, A. M., Norton.
†Rice, W. H., Boston.
†Rucker, W. C., Vineyard Haven.
†Rockwell, H. G., Amherst.
†Rowe, C. A., Tewksbury.
*Robinson, W. H., Boston.
*Robinson, Samuel, Boston.
*Robbins, Chandler, Boston.
*Richardson, Anna G., Boston.
*Randall, G. M., Boston.
*Rogers, F. A., Everett.
*Roach, A. J., Lowell.
*Rosa, H. A., Fall River.
†Shea, J. J., Beverly.
†Shay, T. M., Boston.
†Stratton, R. R., Melrose.
†Stubbs, F. R., Newton.
Stone, R. E., Beverly.
†Stevens, H. E., Boston.
†Spalding, Roger, Duxbury.
*Smithwick, Marsena P., Boston
*Shoninger, L. S., Boston.
*Sanborn, G. P., Boston.
*Sever, J. W., Boston.
*Stickney, W. G., Beverly.
*Scales, R. B., Dorchester.
*Sheer, M. I., Chicopee Falls.
*Sawin, C. D., Boston.
*Stevens, Seriah, Boston.
*Stuart, F. W., So. Boston.
*Steele, A. E., Boston.
*Smith, S. B., Haverhill.
†Tallma, A. L., E. Boston.
†Tigh, F., Newburyport.
†Tolman, Henry, Jr., Boston.
†Talbot, F. B., Brookline.
†Towle, H. C., Boston.
*Tobey, G. L., Clinton.
*Trask, J. W., Lynn.
*Tingley, Louisa P., Boston.
*Tibbetts, J. T., Boston.
†Willis, C. A., Waltham.
†Walker, W. Dacre, Peabody.
†Whitcher, B. R., Boston.
†Walsh, J. E., Revere.
†Worthen, C. A., Lynn.
†Wood, H. A., Waltham.
Webber, S. G., West Newton.
Woods, G. L., Springfield.
†Walsh, C. J., Cambridge.
Winslow, F. B., Boston.
†Wilder, R. S., No. Cambridge.
†Watson, F. G., Boston.
†Washburn, G. H., Boston.
†Whitman, L. O., Boston.
Warren, B. S., Boston.
*Whitehill, G. E., Everett.
†Young, R. D., Arlington.
†Young, R. R., Boston.

MICHIGAN.

†Bostwick, W. E., Algonac.
Baruch, J. B., Detroit.
†Barrett, A. M., Ann Arbor.
Babcock, W. L., Detroit.
†Bradley, E. B., Ann Arbor.
†Clark, O. H., Kalamazoo.
Cook, H. H., Detroit.
†Edmunds, C. W., Ann Arbor.
†Forbes, E. B., Detroit.
†Freund, H. A., Ann Arbor.
†Hart, Eugene, Eureka.
Highfield, E. M., Edmore.
*Hubbard, C. D., Parma.
†Kline, G. M., Ann Arbor.
†Kuhn, C. F., Detroit.
†Lyman, W. R., Ann Arbor.
†MacNeal, W. J., Ann Arbor.
†McColl, M., Detroit.
Marshall, Joseph, Durand.
*McVeigh, J. A., Detroit.
†Noble, Kenneth, Milan.
†Presley, W. J., Allendale.
†Panzner, E. J., Detroit.
*Randall, F. H., Bay City.

MINNESOTA.

†Brown, A. H., Pipestone.
†Barrett, E. E., Glencoe.
†Baker, A. C., Fergus Falls.
†Bullen, F. W., Eveleth.
*Boyd, F. P., Northfield.
†Daigneau, F. E., Austin.
†Haynes, B. H., St. James.
†Hart, A. B., Canton.
†Hooslef, J. C., Lanesboro.
†Larsen, C. L., Buffalo.
†Litzenberg, J. C., Minneapolis.
*Lyman, Frank, Duluth.
†McLaughlin, E. M., Winona.
†McCuen, J. A., Duluth.
*Quinby, T. F., Minneapolis.
*Stinchfield, A. W., Rochester.
†Thompson, A., St. James.
†Wilkowske, C. W. Faribault.

MISSISSIPPI.

†Hightower, G. D., Webb.
†Rembert, G. W. F., Jackson.
†Sisler, G. W., Water Valley.
†Towns, S. R., Union Church.

MISSOURI.

Block, Jacob, Kansas City.
†Bradley, T. L., Warrensburg.
Bliss, M. A., St. Louis.
†Clapper, W. L., St. Louis.
*Day, W. E., Clarksville.
†Frick, W. J., Kansas City.
†Guggenheim, L. K., St. Louis.
†Higgins, R. M., Kirkwood.
†Keith, F. L., Flat River.
*Kyger, J. W., Kansas City.
†Matthew, J. C., Springfield.
*Meisenbach, A. H., St. Louis.
†Potter, T. E., St. Joseph.
*Standly, Kathryn V., Brookfield.
*Tupper, P. Y., St. Louis.
†Wyer, H. G., Kirkwood.

MONTANA.

†Kennett, G. H., Missoula.

NEBRASKA.

†Akin, H. L., Omaha.
†Earel, J. W., Wood River.
*Grothan, Georgina, St. Paul.
Gilligan, J. P., O'Neill.
Novak, C. E., Du Bois.
†Smersh, O. G., Dodge.

NEVADA.

†Merkle, A. E., Carson City.
†Smith, R. D., Yerington.

NEW HAMPSHIRE.

Allen, W. A., East Hampstead.
†Allen, Bradford, Nashua.
†Beaucleck, W. P., Concord.
†Butterfield, C. E., Suncook.
†Beaton, A. A., Franklin.
†Bakeman, F. A., Franklin.
Boynton, H. H., Lisbon.
Bancroft, C. P., Concord.
Cloggett, F. P., Newport.
*Cogswell, S. J., West Derry.
†Chesley, H. O., Dover.
Chesley, Alice M. M., Exeter.
*Dearborn, E. G., Keene.
*Fowler, I. N., Lebanon.
†Grafton, F. W., Concord.
*Greeley, G. H., Merrimack.
*Griffin, N. L., Bradford.
†Hawkins, F. L., Meredith.
†Hammond, C. B., Nashua.
Jones, F. W., New Ipswich.
*McGregor, G. W., Littleton.
†Nutter, C. F., Nashua.
Tuttle, Walter, Exeter.
*Woodman, J. B., Franklin.
*Weeks, R. W., Manchester.
†Watson, G. N., Manchester.

NEW JERSEY.

†Barwis, E., Trenton.
†Becket, G. C., East Orange.
†Bloom, D. M., Newark.
*Condict, A. W., Dover.
†Conrad, E. K., Hackensack.
†Dias, J. L., Newark.
†Edwards, S. M., Newark.
†Lane, F. B., East Orange.
†Meacham, E. A., So. Amboy.
*Morse, J. H., Bridgeton.
*Pyle, Immanuel, Jersey City.
†Welshman, G. O., Newark.

NEW YORK.

Andrews, J. A., New York.
†Allen, S. Busby, Riverhead.
Anderson, R. B., Brooklyn.
†Andrews, R. W., Poughkeepsie.
†Allen, M. May, Rochester.
*Andrews, J. L., New York.
†Burnham, H. D., New York.
Bliss, F. E., Warsaw.
Barker, J. F., Albany.
†Boynton, P. S., New York.
†Burleson, T. O., Bath.
†Broughton, W. R., New York.
Berg, A. A., New York.
†Bradshaw, L. L., New York.
†Buettner, J. J., Syracuse.
Browne, Valentine, Yonkers.
*Bull, W. T., New York.
*Bassett, M. I., Cooperstown.
*Braman, H. S., Homer.
*Brinkman, G. H., Sidney.
*Bailey, E. P., Oneida.
Bryan, Wm., New York.
Cronk, J. M., Hyde Park.
Cornwall, E. E., Brooklyn.
†Conboy, Philip, Rochester.
†Carroll, T. L., Albany.
†Coleman, Jos., New York.
†Craton, S. B., Syracuse.
†Crispin, A. M., New York.
†Crump, G. A., New York.
†Campbell, W. F., Brooklyn.
†Chace, W. H., Buffalo.
Champlin, Elwin, Griffin Corners.
*Crumb, C. W., Utica.
*Crane, S. Ellis, Syracuse.
*Cochrane, J. E., Valatie.
†Ditman, N. E., New York.
†Dickinson, R. L., Brooklyn.
Dunham, Carroll, Irvington.
Darrach, Wm., New York.
Doubleday, Chas. E., Penn Yan.
*Dennis, B. F., Niagara Falls.
Ewell, E. W., Lancaster.
Edwards, David, East Hampton.
Ellis, C. A., Sherman.
†Elsner, S. L., Rochester.
†Ellis, J. B., Little Falls.
†Fudge, H. W., Elmira.
*MacFarlane, T. J., Brooklyn.
Gardner, W. S., New York.
Gnichtel, A. L., New York.
†Goodsell, W. E., Medina.
†Gage, G. H., Rochester.
†Gant, S. G., New York.
*Glover, J. J., Stuyvesant Falls.
Haas, S. V., New York.
†Hazen, J. L., Brockport.
†Hunter, H. J., Ilion.
†Hallenbeck, O. J., Canandaigua.
*Hoag, D. E., New York City.
†James, W. B., New York.
†Kyle, E. H., Ithaca.
†Kittinger, F. A., Lockport.
†Knapp, Arnold, New York.
†Kenerson, V., Buffalo.
†Kivlin, C. T., Troy.
*Kosmak, G. W., New York.
†Lloyd, Samuel, New York.
†Lyle, H. H., New York.
†La Rocque, J. H., Plattsburgh.
†Lyman, H. C., Sherburne.
†Lilienthal, Howard, New York.
†Lenz, George, Gloversville.
†Lynch, J. M., New York.
†Leary, M. E., Rochester.
*Lack, C. E., Brooklyn.
*Loughran, F. W., New York.
*Lewi, M. J., New York.
†Mac Farlane, R. F., Long Island City.
Meyer, L. B., New York.
Morgan, H. J., New York.
†Murphy, J. P., Brooklyn.
†McCreary, E. R., Watertown.
†Madden, Frank, Plattsburgh.
†Manley, T. F., Norwich.
†McNaughton, George, Brooklyn.
McMarrow, Frank, Syracuse.
†McKeeby, W. C., Syracuse.
†McMullen, C. G., Schenectady.
*Munday, Bert, New York.
*Murphy, C. O., New York.
*MacArthur, Charlotte B., Willard.
†Neuman, L. H., Albany.
Potter, W. W., Buffalo.
Palmiter, L. B., Mt. Upton.
†Pfaff, Otto, Oneida.
†Pearson, L. W., Brooklyn.
†Pike, A. S., Rochester.
†Potter, M. C., Rochester.
†Peck, G. A., New Rochelle.
Page, J. R., New York.
Robertson, J. N., Wolcott.
Rogers, H. C., Brooklyn.
†Reed, J. E., Schenectady.
Scales, Jefferson, Tompkinsville, L. I.
†Smith, D. H., Bath.
†Sheridan, C. A., Oswego.
†Shaw, H. B., New York.
†Shultz, P. David, New York.
†Shields, G. F., New York.
†Scott, F. W., Medina.
†Smith, F. W., Syracuse.
†Sheehey, J. J., Brooklyn.
†Suiter, A. W., Herkimer.
†Smith, Marion R., McGraw.
†Sill, H. D., Cooperstown.
*Stephenson, F. H., Syracuse.
*Schirmer, W. C., Brooklyn.
*Stern, A. A., Rondout.
Twichell, D. C., Saranac Lake.
†Timmerman, C. F., Amsterdam.
†Towsley, W. D., Camden.
†Totman, D. M., Syracuse.
†Teller, H. J., Rome.
†Unger, I. M., Ithaca.
†Van Duyn, E. S., Syracuse.
Wallace, W. L., Syracuse.
†West, J. N., New York.
†Wilson, Benj., Rochester.
†Werfelmann, W. J., Syracuse.
†Wiencke, E. J., Schenectady.
†Weidman, C. E., Marcellus.
†Warren, R. C., Ithaca.
Wiltse, James, Benson Mines.
†Williams, J. R., Rochester.
†Welty, G. W., Brooklyn.
†Wells, E. H., New York.
†Walker, J. B., New York.
*Williamson, Stacy D., Malone.
*Whitney, C. A., New York.
†York, G. D., Newark.

NORTH CAROLINA.

†Crowell, A. J., Charlotte.
*Crowell, W. H., Wilmington
†Brown, T. E. W., Asheville.
†Merrimon, L. A., Asheville.
*Munroe, J. P., Davidson.
†Reaves, W. P., Greensboro.
*Rankin, W. S., Wake Forest.
†Roberts, Frank, Marshall.
†Sweaney, John, Leaksville.
†Smith, Owen, Asheville.
*Templeton, J. M., Cary.
†Taylor, T. G., Leaksville.

NORTH DAKOTA.

†McDonald, A. L., Grand Forks.
†Arneson, A. O., Park River.
†Taylor, J. D., Minot.

OHIO.

†Anderson, W. V., Toledo.
†Bennitt, C. E., Wauseon.
†Brim, B. B., West Toledo.
†Conarroe, A. W. Y., West Elkton.
†Chaney, H. M., Sardinia.
†Culbertson, N. W., Massillon.
†Counts, W. L., Chillicothe.
†Covington, P. D., Bellefontaine.
†Crowell, W. S., Cleveland.
†De Courcy, W. E., Cincinnati.
*Dunham, Kennon, Cincinnati.
†Ervin, A. O., New Holland.
†Frame, A. B., Piqua.
†Gundrum, W. H., Toledo.
†Gans, D. W., Massillon.
†Glass, J. O., Springfield.
†Hamilton, G. C., Louisville.
†Ickes, E. M., Fremont.
†Johnson, G. C., Liverpool.
†Jones, Grace, Toledo.
†James, W. S., Cleveland.
†McMichael, J. C., Cleveland
†Murray, J. E., Piqua.
†McGavran, C. W., Columbus.
†Milner, W. L., Cincinnati.
†McKemy, J. W., Dayton.
†Merriam, W. H., Cleveland.
†Parsons, W. T., Cleveland.
†Ryan, Michael, Dayton.
†Seiler, J. H., Akron.
†Solomonson, S. H., Cleveland.
†Sawyer, C. W., Marion.
†Storz, C., Toledo.
†Selby, C. D., Toledo.
†Southwick, P. F., Sandusky.
Scott, A. C., Cleveland.
†Sutton, H. T., Zanesville.
†Tuttle, Vine H., Orwell.
†Wilson, J. W., Van Wert.
†Welch, H. E., Youngstown.
†Wright, J. F., Toledo.
†Zimmermann, J. S., Youngstown.

OKLAHOMA.

†Toad, H. C., Oklahoma City.

PENNSYLVANIA.

*Asdale, Jos. W., Pittsburg.
†Bold, V. J., Philadelphia.
*Bryner, J. H., Ickesburg.
*Beaver, D. R., Conshohocken.
†Conner, R. E., Hickory.
†Cook, C. B., Pittsburg.
*Corser, J. B., Scranton.
*Cornell, W. S., Philadelphia.
†Durham, J. R., Warren.
*Drawbaugh, J. H., Shiremanstown.
*Duncan, J. L., Pittsburg.
Dixon, S. G., Philadelphia.
†Everhart, J. K., Pittsburg.
*Furbush, C. L., Philadelphia.
†Gregory, W. E., Stroudsburg.
*Gibby, H. B., Pittston.
Gildersleeve, Nathaniel, Philadelphia.
†Hegarty, J. P., Pittsburg.
†Hill, H. K., Philadelphia.
*Hayes, C. H., Pittsburg.
*Hower, H. V., Millinville.
†Jones, C. R., Pittsburg.
†Johnston, J. M., Huntingdon.
†Krug, J. A., Philadelphia.
†Kerr, J. P., Pittsburg.
Kaufman, A. S., New Kensington.
Lloyd, R. J., Olyphant.
†McCool, J. L., Marcus Hook.
*Murdoch, F. H., Pittsburg.
*Malann, M. E., Carbondale.
McConnell, T. E., Parnasus.
†O'Neal, W. H., Gettysburg.
†O'Dea, C. A. Erie.
†Reynolds, J. M. C., Washington.
*Rhodes, F. A., Pittsburg.
†Spahr, C. E., York.
†Swanton, R. V., Pittsburg.
†Shields, W. G., Jr., Philadelphia.
*Shields, S. S., Carbondale.
*Slaymaker, J. M., Philadelphia.
*Taylor, C. F., Philadelphia.
†von Cotzhausen, Louis, Philadelphia.
*Wynn, C. A., Greensburg.

RHODE ISLAND.

†Bean, F. W., Anthony.
†Brown, B. J., Jr., Providence.
*Brazill, F. H., Greenville.
*Barber, J. De Vere, Westerly.
†Corrigan, J. P., Pawtucket.
*Cook, I. S., Georgiaville.
†Coxe, D. B., Riverside.
†Hall, N. R., Warren.
*Haines, G. B., Valley Falls.
*Harvey, E. B., Providence.
*Hammond, Roland, Providence.
*Jones, A. T., Providence.
*Kimball, H. W., Providence.
†King, G. F., Providence.
Mack, J. A., Crompton.
*Munro, W. L., Providence.
†Messinger, H. C., Providence.
*Noyes, R. F., Providence.
*Savage, C. G., Westerly.
†Tefft, B. F., Jr., Anthony.

SOUTH CAROLINA.

Adams, E. C. L., Columbia.
†McKinney, J. E., Granville City.

SOUTH DAKOTA.

†Frost, W. S., Lily.
†Pinard, P. R., Geddes.
†Rider, A. S., Flandreau.

TENNESSEE.

*Cowden, C. N., Fayetteville.
*Crutcher, J. R., Memphis.
†McGhee, J. B., Chattanooga.
*Roberts, D. J., Nashville.

TEXAS.

†Armstrong, E. M., Houston.
Barrett, H. E., Mt. Calm.
†Cabble, T. H., Rusk.
†Duckett, J. D., Houston.
†Day, J. W., Stephenville.
†De Pew, E. V., San Antonio.
†Ferguson, C. D., Silsbee.
†Goeth, R. A., San Antonio.
†Gantt, A. M., Dallas.
†Gray, R. L., Chandler.
†Jones, C. C., Comfort.
†Le Grand, C. W., Hempstead.
†Miller, L. H., Stephenville.
†Mathews, R. L., Winchell.
†McGown, M. W., Yellowpine.
McMullen, W. F., Rockport.
†Rice, C. F., Sanger.
†Talbott, R. D., Ft. Worth.
†Turner, B. H., Cleburne.

Taylor, W. C., Calvert.
Welch, T. A., Groesbeck.
Wallace, Bruce, Houston.
Money, R. S., Dallas.

UTAH.

Joyce, R. S., Ogden.

VERMONT.

*Axtell, F. C., Randolph.
*Browne, C. A., Ludlow.
Cheney, A. A., Lyndonville.
*Clough, A. F., Poultney.
Deziel, J. S., Barre.
*Edmunds, G. F., Bristol.
Fish, E. J., So. Royalton.
*Lange, B. D., Newport.
*Meegan, F. C., Felchville.
Patton, J. R., Fairfield.
Templeton, P. C. W., Irasburg.
Valleau, A. J., Wolcott.

VIRGINIA.

Carnaday, D. P., Floyd.
Gorman, E. A., Alexandria.
Howe, H. D., Hampton.
Myers, H. L., Norfolk.
Miller, J. E., Norfolk.
Tatum, R. H., Clifton Forge.

WASHINGTON.

‡Bales, C. W., Kelso.
‡Clough, H. B., Sultan.
‡Hamley, E. C., Sprague.

WEST VIRGINIA.

Baker, F. L., Burlington.
*Charter, L. R., West Union.
‡Hume, J. T., Hinton.
‡Mackin, R. D., Grafton.
‡Neill, Wm., Charlestown.
Robertson, H. L., Ward.

WISCONSIN.

‡Coombe, W. R., Blue River.
Dougherty, A. A., Boaz.
‡Dickens, W. C., Wausau.
‡Farnsworth, C. P., Madison.
‡Murdock, H. D., Brodhead.
*Guagi, W. B., Monroe.
‡Herb, Isabella C., Oshkosh.
‡Murphy, W. T., Waukesha.
‡Scheer, G. H., Sheboygan.
‡Suiter, F. C., La Crosse.
‡Woodard, Adelaide, Ashland.
‡Werner, Nels., Barron.

HAWAII.

*Baldwin, W. D., Honolulu.

Marriages

GERALD SHELLY, M.D., Mulvane Kan., to Miss Bessie Nessly, June 27.

HILDUS A. NASS, M.D., to Miss Mamie Nessa, both of Mabel, Minn., June 14.

LOUIS P. FELCH, M.D., to CARRIE L. INNES, M.D., both of Boston, June 21.

N. O. RAMSTAD, M.D., to Miss Edna Winchester, both of Bismarck, N. D., June 20.

CHARLES A. KREUTZER, M.D., to Miss Helene Kramer, both of Milwaukee, June 26.

J. ALMER SMITH, M.D., Exmore, Va., to Miss Lois Fisher, at Baltimore, June 27.

WILLIAM C. ROSS, M.D., Kempton, Ill., to Miss Carrie Hays of Joliet, Ill., June 16.

CLAYTON T. FALLS, M.D., to Miss Blanche Carter, both of Winfield, Kan., June 14.

GEORGE MADISON MAXWELL, M.D., to Miss Fannie Verge Kurtz, at Birdsboro, Pa.

ELMER ERNEST SOUTHARD, M.D. to MABEL AUSTIN, M.D., both of Boston, June 25.

JOHN E. RARICK, M.D., Wolcottville, Ind., to Miss Mable Webb of Chicago, recently.

ALDEN R. HOOVER, M.D., Muscatine, Iowa, to Miss Estner Finger of Chicago, June 27.

HALFORD J. MORLAN, M.D., to Miss Percy Eugene Bohrer, both of Ludlow, Ill., June 30.

FRANK M. MCILVANEY, M.D., to Miss Mary Maud Meyer, both of Marion, Wis., recently.

GLENN W. STOCKWELL, M.D., Detroit, Mich., to Miss Elizabeth Heron of Toledo, June 18.

HENRY F. MIKEL, M.D., Columbia, Mo., to Mrs. Eva R. Scott of Fayette, Mo., June 21.

JAMES S. WILSON, M.D., Julian, Neb., to Miss Bessie Lorimor of Auburn, Neb., June 15.

BERTON J. BRANTON, M.D., Atwater, Mich., to Miss Alice Brown of Minneapolis, July 11.

FREDERICK E. JONES, M.D., Boston, to Miss Florence N. Knox, of Brookline, Mass., June 2.

CHARLES W. SCHAUBEL, M.D., to Miss Marion Fuller Paterson, both of Philadelphia, June 21.

LESLIE L. WILLOUGHBY, M.D., Alba, Mich., to Miss Margaret Robena of Kilsyth, Ont., June 14.

ROBERT FRENCH MASON, M.D., to Miss Frances Louise Fuller, both of Washington, D. C., June 25.

ALBERT G. SINGEWALD, M.D., Baltimore, to Miss Jennie Morrison, at Lynchburg, Va., June 20.

JOHN R. MINEHART, M.D., to Miss Katherine Violet Cosgrove, both of Philadelphia, June 9.

JOHN WALTER MARTIN, M.D., Colfax, Iowa, to Miss Fannie Lenore Benson of Chicago, June 20.

CHARLES EDWIN SEARS, M.D., Wallace, Idaho, to Miss Irma Jeanette Mentz of Chicago, June 11.

WILLIAM SHRONTZ, M.D., Martinsburg, Ohio, to Miss Pearl Rouse of Paintersville, Ohio, June 20.

FRANCIS W. MCNAMARA, M.D., Detroit, to Miss Isabelle Hackett of Duluth, Minn., June 20.

EDWIN E. OLANDER, M.D., St. Paul, Minn., to Miss Thekla A. Wahlquist of Minneapolis, June 22.

WALTER HODGE SHELDON, M.D., Madison, Wis., to Miss Helen Waite of Portsmouth, Ohio, June 14.

FREDERICK EDWARDS DILLEY, M.D., to Miss Mary Grace French, both of Cleveland, Ohio, June 12.

LOUIS TALCOTT WALDO, M.D., Willard, N. Y., to Miss Claire Howell Forster of Ovid, N. Y., June 18.

BERT E. THOMAS, M.D., St. Marys, Ohio, to Miss Harriet Hollingsworth of St. Paris, Ohio, June 19.

EDWIN L. PERKINS, M.D., Sioux Falls, S. D., to Miss Sena Marie Swenson of Chaska, Minn., June 21.

CHARLES V. CRANE, M.D., Tawas City, Mich., to Miss Catherine Johnson of Portsmouth, Ohio, June 27.

JAY BYINGTON COVERT, M.D., Geneva, N. Y., to Miss Magdalene Schumacker of Boston, Pa., June 27.

EDWARD H. SPITZKA, M.D., Philadelphia, to Miss Alice P. Eberspacher of White Plains, N. Y., June 22.

GEORGE KNAPP ABBOTT, M.D., Loma Linda, Cal., to CORA MAY RICHARDS, M.D., of Bethel, Wis., July 5.

CHARLES SUMNER ROCKHILL, M.D., Cincinnati, Ohio, to Miss Margaret Hackedorn of Toledo, Ohio, June 27.

WALTER LYLE DUNNING, M.D., Ottumwa, Iowa, to Miss Sarah Madge Pettitt of Oskaloosa, Iowa, June 27.

FREDERICK HAROLD NIES, M.D., New York City, to Miss Abby Huntington Ware of Topeka, Kan., June 20.

THOMAS MCMAHON, M.D., Victor, Iowa, to Miss Mabel Waller of Clear Lake, Iowa, at Iowa City, June 13.

H. FLETCHER SILVER, M.D., Goldsboro, Md., to Miss Anna Louise Alton, at Prince Fredericktown, Md., June 27.

Deaths

Charles Lester Spaulding, M.D. Bellevue Hospital Medical College, New York City, 1898, Harvard University Medical School, Boston, 1899; formerly professor of obstetrics in the Kansas City Medical College, instructor in orthopedic surgery in the University of Kansas School of Medicine; a member of the Boylston Medical Society, Boston; Medical Association of the State of Missouri, and Jackson County (Mo.) Medical Society; a surgeon in the Navy during the Spanish-American War, was instantly killed June 24 by falling three stories through an elevator shaft in the building in which he had his office in Kansas City, aged 37. The Jackson County Medical Society, at a special meeting June 25, adopted appropriate resolutions on the death of Dr. Spaulding, and designated members of the society to act as pallbearers.

Paul R. Brown, M.D. Berkshire Medical College, Pittsfield, Mass., 1867, some-time lecturer on medicine and obstetrics in Cornell University, Ithaca, N. Y., and president of the Tompkins County Medical Society; assistant surgeon U. S. Army, with the rank of first lieutenant from Nov. 10, 1874, to Nov. 10, 1879, when he was promoted to captain and assistant surgeon; made major and surgeon Dec. 3, 1891, and retired on account of disability in line of duty Oct. 1, 1897; a member of the Guthrie District (Okla.) Medical Association, and for several years a resident of Guthrie, died at Phillipsburg, Pa., May 31, aged 59.

John Alexander Tanner, M.D. University of Virginia, Medical Department, Charlottesville, 1875, formerly passed assistant surgeon United States navy, first surgeon of the naval battalion, N. V. M.; a member of the Massachusetts Medical Society, Boston Society for Medical Improvement, Dorchester Medical Club, and twice vice-president of the Norfolk District Medical societies; in the early eighties a professor in the Hospital College of Medicine, Louisville, and lecturer of the Polytechnic Society of that city, died at his home at Dorchester, Mass., June 21, after a short illness, aged 53.

Henry Remsen Tilton, M.D. Assistant Surgeon General U. S. Army, retired, who entered the Army as an assistant surgeon, Aug. 26, 1861, was made captain and assistant surgeon July 28, 1866, brevet major March 13, 1865, major and surgeon June 26, 1876, lieutenant colonel and deputy surgeon general August 12, 1893, was retired by operation of law Feb. 1, 1900,

and was made colonel April 23, 1904; who served as surgeon general of the Department of Dakota until his retirement, died at Madison Barracks, N. Y., June 25. He will be buried in the National Cemetery, Arlington.

Joseph Kornitzer, M.D. University of Vienna, 1866, a member of the American Medical Association; in 1848 a private in the revolutionary Hungarian army under Kossuth, and surgeon-in-chief during the Austro-Prussian war of 1866, on duty at a hospital at Kloster-Neuberg; since 1868 a resident of the United States, from 1873 to 1882 in Topeka, Kas., and since that time a practitioner of Socorro, N. M.; for twenty-six years a specialist in tuberculosis, died at his home in Socorro, June 14, after a brief illness, aged 81.

Edward C. Geddings, M.D. University of Berlin, Germany, 1858; said to have been the first American to be graduated from the University of Berlin; major and surgeon in the Confederate service during the Civil War; in 1866 professor of physiology in the Medical Department of the University of Augusta, Ga., and dean of the faculty of that institution until his retirement in 1891; renowned and esteemed as a practitioner and educator, died at his country home near Augusta, June 24, aged 73.

Jeremiah Wesley Rowe, M.D. Jefferson Medical College, Philadelphia, 1871, a veteran of the Civil War, at one time burgess of Woodbury, Pa., and secretary of the Altoona Academy of Medicine and Surgery and of the Blair County Medical Society, died suddenly at his home in Altoona, June 29, from cerebral hemorrhage, aged 59. At a special meeting of the Blair County Medical Society resolutions were adopted regarding the death of Dr. Rowe.

Henry Clay Willison, M.D. New York University, New York City, a resident of Port Townsend, Wash., for 32 years, a member of the constitutional convention in 1889, superintendent of the Stellacoom State Hospital in 1874, for several terms president of the State Medical Association and a member of the State Board of Medical Examination, died at his home in Port Townsend, from nephritis, after a long illness, June 12, aged 60.

Edmund Kovats, M.D. University of Vienna, Austria, 1870, one of the most prominent citizens of Milwaukee, Wis., a member of the Wisconsin Medical Society, and of the German Medical Society, Milwaukee, for many years a member of the staff of the Milwaukee Hospital, died at his home in Milwaukee, June 19, after an illness of two weeks, from pneumonia, aged 60.

William Judkins, M.D. Miami Medical College, Cincinnati, 1873, a member of the American Medical Association, and for many years one of the most prominent physicians of Cincinnati, a member of the Cincinnati Academy of Medicine, the Loyal Legion, and the Sons of the Revolution, died suddenly at his home in Cincinnati, June 23, from cerebral hemorrhage, aged 59.

Leonard T. Cox, M.D. Louisville Medical College, 1886, a member of the American Medical Association; a practitioner at Rosine, Ohio County, Ky., and Beda, until 15 years ago, when he moved to Daviess County and settled in Stanley, and thence moved to Owensboro, in 1898, died at his home in the latter city, June 21, from appendicitis, after an illness of three weeks, aged 63.

Herbert A. Weinsberg, M.D. Marion-Sims-Beaumont Medical School, St. Louis, 1901, of St. Louis, Mo., a member of the American Medical Association, for two years an interne in the City Hospital, St. Louis; one of the most promising young physicians of that city, died in El Paso, Tex., June 23, from tuberculosis, after an illness of three months, aged 27.

George A. Thompson, M.D. New York University, New York City, 1880, of Phoenix, Md., disappeared June 21, near Ashland, Md. His body was recovered in Gunpowder river, June 29, bearing evidence of injuries supposed to have been received from being struck by a train. Dr. Thompson was 55 years old, and served as surgeon during the Spanish-American war.

West Jacobs Swartz, M.D. College of Medicine and Surgery of the University of Minnesota, Minneapolis, 1900, of Forest Lake, Minn., a member of the American Medical Association, and a prominent physician of Washington County, Minn., died at St. Luke's Hospital, St. Paul, June 16, from sarcoma of the right lung, after an illness of three weeks, aged 30.

Walter Keate, M.D. Harvard University Medical School, Boston, 1898, a member of the Salt Lake County Medical Society, and one of the best known physicians of Southern Utah, and a member of the staff of the Latter Day Saints Hospital, Salt Lake City, died from uremia at that institution, April 15, after an illness of six weeks, aged 37.

George J. Chamberlain, M.D. Pennsylvania Medical College, Philadelphia, 1850, said to have been the oldest practitioner of Lackawanna County, Pa., for many years health physician of Dunmore, Pa., died at his home in Dunmore, June 30, from cerebral hemorrhage, after an illness of two weeks, aged 82.

Henry W. Hitzrot, M.D. College of Physicians and Surgeons, Baltimore, 1880, a member of the American Medical Association, and a practitioner of McKeesport, Pa., for many years, died at his country home in Versailles Township, June 23, from heart disease, after an illness of two years, aged 58.

Charles G. Towar, M.D. Detroit College of Medicine, 1899; University of Berlin, Germany, 1903, a member of the American Medical Association, for two years a practitioner of Atlantic City, N. J., and afterward a resident of New York City, died in that city June 30 from sunstroke, aged 31.

Robert W. Hicks, M.D. Kansas City Hospital College of Medicine, 1885, a member of the Kentucky Midland Medical Association, and for several terms a member of the city council of Midway, Ky., died at his home in that city, June 23, from uremia, after a short illness.

Guiseppe Ronga, M.D. University of Naples, Italy, 1873, one of the oldest Italian physicians of Chicago, and founder and editor until 1901 of the *Tribuna*, died at the Presbyterian Hospital in that city, from cerebral hemorrhage, June 20, after a short illness, aged 62.

Thomas H. Bates, M.D. University of Nashville, Medical Department, 1871, for many years a practitioner of Brinkley, Ark., a confederate veteran, died in Cook County Hospital, Chicago, May 23, from nephritis, after an illness of five months, aged 68.

William M. Lively, M.D. Long Island College Hospital, Brooklyn, 1879; a colored physician of Brooklyn, N. Y.; one of the founders of McDonough Hospital, Manhattan, and its treasurer for three years, died suddenly in Allentown, N. J., June 18, aged 58.

Samuel Hunter Jameson, M.D. New York University, New York City, 1856, who is said to have established the first free emergency hospital in New York City, died at his home in New York from senile debility, January 5, after an illness of three months, aged 85.

Herbert J. Van Wagonen, M.D. The University and Bellevue Hospital Medical College, New York City, 1899, of Germantown, N. Y., died at the home of his father in Westernville, N. Y., from Bright's disease, June 15, after a long illness, aged 33.

Samuel Zimmerman Davis, M.D. Charity Hospital Medical College, Cleveland, Ohio, 1868, of Jeromeville, Ohio, died in the Sherick Hospital, Ashland, Ohio, April 25, from cystitis, for which an operation had been performed ten days before, aged 63.

A. H. Clayton, M.D. Hahnemann Medical College, Philadelphia, 1865, a veteran of the Civil War, for twenty-six years a member of the Northampton School Board, died at his home in Richboro, Pa., July 2, from uremia, after a long illness, aged 64.

Charles Carroll Hummell, M.D. Jefferson Medical College, Philadelphia, 1877, for many years a practitioner of Mechanicsburg, a member of the Cumberland County Medical Society, died at his home in that city, June 30, from bronchitis, aged 51.

Robert Craik, M.D. McGill University Medical Department, Montreal, 1854, dean of that institution from 1889 to 1901, who was given the honorary degree of LL.D. by his alma mater in 1895, died at his home in Montreal, June 28, aged 77.

Edward Hoehn, M.D. University of Zurich, Switzerland, 1853, for many years a practitioner of Columbus, Neb., died at the home of his daughter in Danville, Ill., June 29, after a brief illness, aged 76.

Melvin Roscoe Smith, M.D. 1862, an eclectic practitioner of Laurel, Iowa, for many years, died in the hospital at Guthrie Center, Iowa, May 1, from cancer of the liver, after an illness of six months, aged 66.

Julius R. L. Clarkson, M.D. Medical Department of the University of Missouri, St. Louis, 1851, for several years coroner of Randolph County, Mo., died at his home in Moberly, Mo., June 22, aged 76.

Jacob W. Cline, M.D. Miami Medical College, Cincinnati, 1869, for many years a practitioner of Toledo, Ohio, died June 29, at his suburban home near that city, after a long illness, aged 73.

J. Garland Haley, M.D. College of Physicians and Surgeons, Baltimore, 1889, a practitioner of Hinton, W. Va., died at the home of his parents near Frederick's Hall, Va., June 29, aged 38.

John T. Ferguson, M.D. University of Victoria College, Cobourg, Ontario, 1872, of Middleville, Mich., died at the Union Benevolent Association Hospital, Grand Rapids, July 2, aged 64.

Isaiah Dever, M.D. Eclectic Medical Institute, Cincinnati, 1860; Starling Medical College, Columbus, 1866; died at his home in Clinton, N. Y., June 24, ten days after a fall, aged 72.

Thomas Francis O'Brien, M.D. Southwestern Homeopathic Medical College, Louisville, 1906, died in Louisville, June 5, from tuberculosis, aged 48, after an illness of three months.

James B. Ford, M.D. New York, 1853, for many years a practitioner of Baltimore, died at the home of his niece in that city, July 1, aged 84, after an illness of five months.

Peter J. Flanagan, M.D. New York University, New York City, 1875, formerly of Holyoke, Mass., died at his home in Hartford, Conn., June 19, after a long illness, aged 54.

James H. Ferrel, M.D. Homeopathic Hospital College, Cleveland, 1885, died at his home in Carey, Ohio, June 19, from heart disease, after an illness of eight weeks, aged 46.

Charles M. Colvin, M.D. Medical College of Ohio, Cincinnati, 1878, of Attica, Ind., died in a sanitarium in Indianapolis, June 26, after an illness of more than a year, aged 52.

Henry H. Kane, M.D. Long Island College Hospital, Brooklyn, 1877, of New York City, died at Saranac Lake, N. Y., June 28, from tuberculosis, after an illness of a year.

John Hazard Henry, M.D. Hahnemann Medical College, Philadelphia, 1851, died at his home in Montgomery, Ala., June 19, after an illness of more than a year, aged 77.

William H. Goodwin, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1870, died at his home in Eldorado, Ark., June 15, from heart disease.

George Cassel, M.D. Medical College of Fort Wayne, Ind., 1881, a retired physician of Hartford City, Ind., died at his home in that city from septicemia, July 2.

Jonathan Flagg, M.D. (Examination, Massachusetts) died at his home in Worcester, May 20, from chronic kidney disease, after an illness of several years, aged 66.

George W. Draper, M.D. Albany (N. Y.) Medical College, 1858, one of the oldest physicians in Syracuse, N. Y., died at his home in that city, June 7, aged 73.

James H. Goddard, M.D. Cincinnati College of Medicine and Surgery, 1866, a pioneer settler of Harvey County, Kan., died at his home in Sedgwick, Kan., June 5.

Thomas J. Yarrow, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1894, of Philadelphia, died at Cape May, N. J., June 27.

Howard H. Hopkins, M.D. University of Maryland School of Medicine, Baltimore, 1869, died from tuberculosis, June 26, at his home in Newmarket, Md., aged 58.

John Franklin Wright, M.D. Medical College of Ohio, Cincinnati, 1850, died at his home in Columbus, Ind., June 16, after an illness of 11 months, aged 75.

Herbert James Liddle, M.D. Long Island College Hospital, Brooklyn, 1896, died at his home in New York City, June 25, after a short illness, aged 32.

John Honsberger, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1896, died from heart disease, in his office at Stayner, Ont., June 16.

David M. Cooper, M.D. Medical Department of the St. Louis University, 1847, of Hemphill, Texas, died near Brookeland, Texas, June 16, aged 83.

Isaac Gay, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1870, died at his home in Berkshire, N. Y., June 17, after a long illness.

John F. Howard, M.D. Medical Department of St. Louis University, 1862, died at his home in Patoka, Ind., June 16, after a long illness, aged 75.

William H. Beck, M.D. Baltimore Medical College, 1906, of Baltimore, was drowned in the Severn River at Annapolis, July 5, aged 23.

Rollin A. Goodell, M.D. Homeopathic College, Cleveland, 1877, died from pneumonia, at his home in Homer, N. Y., July 2, aged 65.

Walter G. MacMahon, M.D. Hahnemann Medical College, Philadelphia, 1884, died at his home in Philadelphia, July 5.

Emmett Hughes, M.D. Queen's University, Toronto, Ontario, died in Ottawa, Ont., July 1, from peritonitis, aged 32.

Wallace E. Clark, M.D. Chicago Homeopathic Medical College, 1881, died in New York City, May 19, aged 47.

Daniel E. Gay, M.D. Louisville Medical College, 1870, of Garfield, Ga., died at Glenn Springs, S. C., June 13.

Margaret Bacon, M.D. Woman's Medical College of Baltimore, 1886, died in that city, July 4, aged 63.

Deaths Abroad.

Fritz Schaudinn, M.D., until recently in charge of the protozoa laboratory of the government public health department in Germany, died June 22, aged 36. He acquired world-wide fame not long ago from his discovery in syphilitic lesions of the *Spirochæta pallida* or *Treponema pallidum* as he preferred to have it called. His untimely death from septic infection follows soon after he had accepted a call to Hamburg to take charge of the parasitologic department of the Institute for Tropical Diseases. The inducements offered him to make the change, as mentioned at the time, were exceptionally flattering. He had been under treatment for a periproctitic abscess since his return from the recent International Medical Congress at Lisbon, where he was hailed with acclaim as the discoverer of the causal agent of syphilis.

A. Josias, M.D., died at Paris recently, aged 51. He was connected with the Bretonneau Hospital and was a member of the council of hygiene for the Seine department and sanitary inspector, and has published a number of works on tuberculosis in children, typhoid fever in the aged, etc., besides collaborating with Robin in his "Traité de Thérapeutique."

P. Ovyssanikoff, M.D., professor of anatomy, histology and embryology at St. Petersburg, and author of numerous and important works on comparative anatomy, etc., died at St. Petersburg, June 11, aged 79.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

JOURNAL OF MORPHOLOGY WANTED.

DR. C. C. LIPP, St. Anthony Park, Minn., asks where he can obtain the *Journal of Morphology*, Volume 4, 1892, and the Proceedings of the Society for Experimental Biology in Medicine, volumes 1 and 2.

PRIZE HOSPITAL PLAN AWARDED AT ST. LOUIS.

DR. FRED BELENAP, Benton Harbor, Mich., asks for particulars about a prize for the best plan for a small hospital which he thinks was awarded at the St. Louis exposition.

RECIPROCITY WITH OHIO.

To correct the statement made in answer to A. B. C. in THE JOURNAL, July 7, 1906, page 52, it should be added that with all the states mentioned, reciprocity is on the basis of an examination.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 7, 1906:

Ruffner, E. L., asst.-surgeon, leave of absence extended two months.

Smart William M., asst.-surgeon, ordered to proceed from Fort Caswell, N. C., to Camp Chickamauga Park, Ga., for temporary duty.

Gray, William W., deputy surgeon general, sick leave of absence further extended one month.

Miller, E. W., asst.-surgeon, ordered to proceed from Fort Clark, Tex., to Fort Sam Houston, Tex., for temporary duty.

Wilson, William H., asst.-surgeon, reports for additional duty at Fort Hamilton, N. Y., in addition to present duties in New York City.

Shimer, Ira A., asst.-surgeon, left Ancon, Canal Zone, on six weeks' leave of absence.

Scott, George H., asst.-surgeon, left from temporary duty at San Francisco, Cal., on ten days' leave of absence.

Ekwurzel, George M., asst.-surgeon, relieved from further duty at U. S. Military Academy, and from temporary duty at Fort Hamilton, N. Y., and ordered to Fort Keogh, Mont., for duty.

Geddings, Edward F., asst.-surgeon, relieved from duty at Fort Keogh, Mont., and ordered to report in person to the commanding general, Department of California, for assignment to duty at the General Hospital, Presidio, San Francisco, Cal.

The advancement from the grade of first lieutenant to that of captain of the following named assistant surgeons, with rank of captain, from June 29, 1906, is announced: Whitmore, Eugene R.; Brownlee, Charles Y.; Murtagh, John A.; Ekwurzel, George M.; Reno, William W.; Buck, Carroll D.; Koerper, Conrad E.; Allen, John H.; Patterson, Robert U.; O'Connor, Roderic P.; Heard, George P.; Noble, Robert E.; Brooke, Roger; Sweazey, Verge E.; DeLaney, Matthew A.; Bloombergh, Horace D.; Devereux, John R.; Halloran, Paul S.; Nelson, Kent; Brechemin, Louis, Jr.; Krebs, Lloyd Le R.; Woodall, William P.; Whitcomb, Clement C.; McAndrew, Patrick H.; Van Poole, Gideon McD.; Gosman, George H. R.; Van Dusen, James W.; De Witt, Wallace; Thornburgh, Robert M.; Grubbs, Robert B.; Shortlidge, Edmund D.; Field, Peter C.; Shaw, Herbert G.

Whinnery, Jean C., dental surgeon, left Fort Casey, Wash., and arrived at Fort Worden, Wash., for duty.

Long, Charles J., dental surgeon, left Fort Yellowstone, Wyo., and arrived at Fort Keogh, Mont., for duty.

Boak, S. Davis, dental surgeon, granted leave of absence for one month.

Wolven, F. Homer, dental surgeon, left Fort Warren, Mass., and arrived at Fort Mansfield, R. I., for duty.

Ferguson, James B., contract surgeon, left transport *Dix* on leave of absence for three months.

Hereford, John R., contract surgeon, ordered from Fort Moultrie, S. C., to Fort Caswell, N. C., for temporary duty.

Adair, George F., contract surgeon, ordered from Fort Wadsworth, N. Y., to Fort Washington, Md., for duty.

Smith, Rodney D., contract surgeon, relieved from duty at Fort Columbia, Washington, and ordered to duty in the Philippines Division.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 7, 1906:

Rossiter, P. S., asst.-surgeon, ordered to the Naval Academy.

Backus, J. W., asst.-surgeon, ordered to the *Franklin*.

Garrison, P. E., asst.-surgeon, ordered to the Naval Hospital, Philadelphia.

Rennie, W. H., asst.-surgeon, ordered to the *Lancaster*.

Ryder, C. E., asst.-surgeon, ordered to the Navy Yard, Boston.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended July 4, 1906:

Oakley, J. H., P. A. surgeon, granted leave of absence for two days, from June 29, 1906.

Lumsden, L. L., P. A. surgeon, relieved from duty at U. S. Revenue Cutter Service Depot, and directed to proceed to Washington, D. C., reporting to the director, Hygienic Laboratory, for temporary duty.

Anderson, John F., P. A. surgeon, directed to proceed to Charlotte, N. C., for special temporary duty, on completion of which to rejoin station in Washington, D. C.

Ramus, C., P. A. surgeon, granted leave of absence for fifteen days, from July 1, 1906.

Stimson, A. M., asst.-surgeon, relieved from duty at Ellis Island, N. Y., and directed to proceed to Washington, D. C., reporting to the director, Hygienic Laboratory, for temporary duty.

Ashford, F. A., asst.-surgeon, granted leave of absence for seven days, from June 27, 1906, under paragraph 191 of the Regulations.

Stiles, Ch. Wardell, chief, division of zoology, granted leave of absence for three days, from June 25, 1906.

Cleaves, F. H., acting asst.-surgeon, granted leave of absence for fourteen days from July 14, 1906.

Rowles, J. A., acting asst.-surgeon, granted leave of absence for nine days, from July 3, 1906.

Gibson, R. H., pharmacist, relieved from duty at Vineyard Haven, Mass., and directed to proceed to New Orleans, reporting to the medical officer in command for duty and assignment to quarters.

Richardson, S. W., pharmacist, relieved from duty in New Orleans, and directed to proceed to Vineyard Haven, Mass., reporting to the medical officer in command for duty and assignment to quarters.

Morris, G. A., pharmacist, granted leave of absence for thirty days, from August 1, 1906.

APPOINTMENTS.

Dr. Joseph G. Wilson was appointed an acting assistant surgeon for duty at Ellis Island, N. Y.

Dr. J. G. Siffer was appointed an acting assistant surgeon for duty at Port Huron, Mich.

BOARDS CONVENED.

A board of officers was to meet at the Hygienic Laboratory, Washington, D. C., July 2, 1906, for the purpose of making an investigation of the origin and prevalence of typhoid fever in the District of Columbia. Detail for the board: P. A. Surgeon M. J. Rosenau, director of Hygienic Laboratory, chairman; P. A. Surgeon L. L. Lumsden; J. H. Kastle, chief of Division of Chemistry, recorder.

A board of officers was convened to meet at the Bureau, Washington, D. C., Aug. 6, 1906, for the purpose of examining candidates for appointment to the position of assistant surgeon in the service. Detail for the board: Surgeon D. A. Carmichael, chairman; Surgeon L. L. Williams; P. A. Surgeon Joseph Goldberger, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended July 6, 1906:

SMALLPOX—UNITED STATES.

Connecticut: Stamford, June 1-30, 1 case.

Florida: Brevard County, June 23-30, 1 case; Columbia County, 4 cases; Duval County, 3 cases; St. Johns County, 1 case.

Georgia: Sapelo Island, June 29, 1 case.

Louisiana: Shreveport, June 23-30, 2 cases, 1 death.

Massachusetts: New Bedford, June 23-30, 6 cases.

Michigan: Detroit, June 23-30, 1 case.

Nebraska: Omaha, June 8-23, 5 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila (received out of date), April 21-28, 1 case.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, April 1-30, 159 deaths.

China: Hongkong, May 5-12, 8 cases, 6 deaths.

France: Paris, June 2-16, 13 cases.

Germany: Bremen, June 9-16, 1 case.

Great Britain: Liverpool, June 9-16, 1 case; London, 1 case.

Greece: Athens, June 4-11, 5 deaths.

India: Bombay, May 29-June 5, 7 deaths; Calcutta, May 19-26, 35 deaths; Karachi, May 27-June 3, 16 cases, 6 deaths; Madras, May 26-June 1, 9 deaths; Rangoon, May 19-26, 12 deaths.

Italy: General, June 7-14, 32 cases.

Japan: Yokohama, May 6-20, 2 deaths.

Russia: Moscow, June 2-9, 6 cases, 4 deaths; Odessa, 6 cases, 2 deaths.

YELLOW FEVER.

Honduras: Pimienta, June 13-16, 13 cases.

Mexico: Merida, June 17-23, 17 cases, 7 deaths.

CHOLERA—INSULAR.

Philippine Islands: Provinces, April 21-28, 17 cases, 16 deaths.

CHOLERA—FOREIGN.

India: Bombay, May 29-June 5, 16 deaths; Calcutta, May 19-26, 25 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, April 21-28, 1 case, 1 death.

PLAGUE—FOREIGN.

China: Hongkong, May 5-12, 96 cases, 89 deaths.

Egypt: Alexandria, June 8-12, 5 cases, 3 deaths; Keneh, June 9-10, 3 deaths; Port Said, June 8-9, 2 cases, 1 death.

India: Bombay, May 29-June 5, 180 deaths; Calcutta, May 19-26, 43 deaths; Karachi, May 27-June 3, 80 cases, 73 deaths; Rangoon, May 19-26, 39 deaths.

Peru: Lima, May 25-31, 1 case; Paita, 1 case, 1 death; Trujillo, 1 case.

Miscellany

A New Method for Indicating Food Values.

The calculations necessary to determine the calorific value of particular articles of food and to estimate the number of calories consumed by a patient on a mixed diet are a tax on the time of the dietary specialist and extremely perplexing to the ordinary physician. The method usually adopted in these calculations necessitates multiplying the percentage of the different constituents of the food by weight of the food consumed and again by the calorific value of proteids, fats or carbohydrates. Roughly, one may add the percentage of fat to that of solid matter and obtain a figure which, multiplied by four, will give the calorific value. J. H. Kellog has simplified the matter somewhat by devising a table which gives the number of calories produced by the proteids, fats, carbohydrates, and the total solids in a given weight of each food. The patient is supplied with a menu card, on which the weight of each food served at the table, and the calories of proteid, fat and carbohydrate, are printed. All the weighing is done in the kitchen and the patient needs merely to check on his menu the articles eaten. Irving Fisher, in the *American Journal of Physiology*, April 2, 1906, presents a method which effects a still greater saving of labor and enables the proportionate calorific value of the different elements of the food to be graphically presented to the eye. The standard of measurement in this method is such a weight of food as will produce 100 calories. Thus, instead of serving to the patient four or some other number of ounces of milk, he is given 4.9 ounces, or some multiple of this standard, which is the amount of milk necessary to produce 100 calories. Of these 100 calories, 19 will be yielded by the proteids, 52 by fat and 29 by carbohydrates.

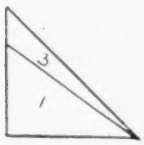
The method enables one to appreciate the true relations of proteid and other constituents of the food. A comparison of milk with pecan nuts by the weight percentage method shows milk proteids, 3.3 per cent.; pecan proteids, 11 per cent.; calculated on the amount yielding 100 calories, the relation appears as milk proteids 19 calories, pecan proteid 6. Tables constructed on this plan will be more instructive than those usually given in the dietetic textbooks. The author proposes to publish such tables.

A geometric representation of the calorific proportions of the elements of a food is obtained by representing 100 calories by an isosceles right-angled triangle, which is divided into three other triangles, whose areas are proportionate to the number of calories yielded by the proteids, fats and carbohydrates of the food. The different triangles may be colored, proteids red, fats yellow and carbohydrates green, or distinguished as in the accompanying diagrams, by figures: 1, proteids; 2, fats; 3, carbohydrates. Somewhat elaborate directions are given by Fisher for drawing these triangles. On the principle that the areas of triangles having the same base are proportionate to their altitude, a common point can be found in which the three triangles will meet. This will be situated at distances from the base and perpendicular proportionate to the calorific power of two of the constituents of the food.

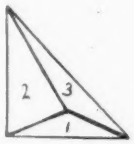
RIPE OLIVES

BEETS

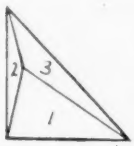
FIGS



BOUILLION

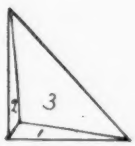


MILK



CLAMS

PECANS



WHITE BREAD

CHICKEN

SIRLOIN STEAK

Thus for bread, which produces 13 calories from proteid and 6 from fat, the meeting point of the triangles would be 13 per cent. of the altitude above the base and 6 per cent. of the base from the perpendicular.

When two foods are combined it is necessary to find an average, determined by the proportions of the various elements and the relative amounts of each food used. Thus if bread and chicken be combined in equal portions the relations will be represented in the following table:

Food.	Weight of standard portion.	Proteid.	Fat.	Carbohydrate.
Bread	1.3	13	6	80
Chicken	3.2	79	21	0
Chicken sandwich	2.25	46	14	40

Geometrically, the point of meeting of the triangles is found midway on a line connecting the meeting points of the triangles for each food taken separately. If unequal portions of the two foods are used the new point divides the line joining the points previously determined in an inverse proportion to the amount of each food used. This point is what is called in physics the center of gravity of the previous points, each weighted in proportion to the calories contained in the two ingredients. When three foods are combined the center of gravity of two is first found and this is then combined with the third.

Since the resultant point is the center of gravity, it is evident that it can be obtained by mechanical methods, and the author has devised a mechanical diet indicator, which consists of a card on which the points for various foods can be marked and the center of gravity found by placing at these points pins of a weight representing standard portions or parts of a portion. The card is now placed in a basket suspended on a standard or allowed to assume stable equilibrium, when the center of gravity will be found directly under a pin attached to the standard and which is so arranged that it may be pressed on the card.

This mechanism will be useful in physiologic computations and in sanatoria where it is necessary to determine when a patient has taken a well-balanced diet and in determining whether a menu represents the requisite number of calories with the proper proportion of the various nutritive elements.

The Press and Quack Advertisements in Germany.—An interesting article on this subject in the Berlin *Hygienische Blätter* for April comments on the way in which the press dominates the entire life of the public. It exerts such a powerful influence in all civilized countries that it is rightly called one of the Great Powers. Such authority, however, the article continues, not only confers powers and rights, but it also imposes great and sacred duties. "To the honor of the high-class press be it said that it is well aware of this. Over and over again we can read how the press regards it as its highest duty to watch over the welfare and the progress of the people and to spread enlightment through the broadest strata of society. The press of each political party seeks to perform this exalted duty and does so, frequently at great sacrifice, sometimes with actual and admirable martyrdom. All the more must it arouse our amazement that there is one branch of the public welfare in which a large part of our widespread press fails in its care for the public welfare. Its guardianship of the public welfare is only a sham in this direction. It gives with one hand, but takes back twice and threefold with the other. We refer to the attitude of the press in respect to quackery and nostrums. We can not take up a periodical without finding more or less of these ads., whether it is a daily paper, a magazine or a 'comic'. Even in the strictly scientific sheets we find these cuckoo eggs laid among the other advertisements. These quack ads. are often so shameless and brazen that we can not help sorrowing for the good name of such periodicals which do not blush to spread such fare before their readers." . . . "Quackery stands and falls with advertising. In the suits against charlatans the witnesses almost invariably testify that they were lured by the wonder-promising ads. of the quack." . . . "The vast sums which can thus be enticed from the public are shown by the ease with which a Nardenkotter can accumulate $150,000 in a short time, and the shepherd Ast can buy a property conferring the title of sir knight. The press is directly responsible for this damage to the health and pocket of the public." The writer, H. Koch, adds that he thrashes over this subject again because he is optimistic enough to believe that "the high-class press will in time, of its own accord and without legal compulsion, act in this matter according to the lights of reason and justice and will refuse to accept the brazen ads. of quacks and nostrums, true to the principles of exalted responsibility and readiness to make sacrifices which it already displays in large measure."

The "Magic Word": Organization.—Under the heading "La Magica Parola," E. Villa, in the *Gazzetta degli Ospedali*, May 17, presents an impassioned appeal for organization of the profession. The occasion is the recent sanitary congress at

Rome, which assembled the country practitioners from the remotest corners of the realm, as already described in these columns (page 1456). The most important result of the unique congress was the great advance made toward a realization of the benefits and power of organization of the profession to accomplish results beneficial to all and to the public at large. Physicians now complain, he says, and merely waste their breath in their complaints. When they once solidly band themselves together they can act and can demand that the matters of which they have cause to complain shall be righted. "All the speakers at the congress," he adds, "from Baccelli and Sanarelli down to the humblest and poorest country doctor, seemed to be inspired with the same zeal for organization. Once organized, then . . . . *delenda Carthago!*" "Organization—this word of amity and of power—should burst spontaneously from every breast, and in this sign we will conquer." The physicians of Bohemia have completed the organization of a society to afford moral and financial support to members in enforcing their just claims in contract practice. It is modeled on the *Leipziger Verband*, and is called *Die Freie Organisation*. The last *Prager med. Wochft.* urges physicians throughout the country to elect a delegate and substitute from each district to confer in regard to desired sanitary regulations, legislation, etc. The appeal concludes with the words: "Away with indolence, away with pessimism, away with fatalism! If self-help is to succeed, every one must take hold and help organize for action along concerted lines, *Kollegen, auf zu Taten*"! Dr. F. Perko of Nuerschan is at the head of the movement. The first meeting was held at Aussig.

Dangers of the Factory. Industrial diseases, according to the London *Daily Telegraph*, have recently attained a new plane of interest. Having baffled all the efforts of scientists and manufacturers to banish them, they have compelled the British government to deal with them as a necessary evil, and under the workmen's compensation bill, now before the British parliament, employers are rendered pecuniarily liable for injury and death which overtake their employés from these causes. Some statistics which appear in the *Labor Gazette* for April are, therefore, of considerable interest and importance. It is well known that lead poisoning claims more victims than any other of the diseases which threaten the factory hand, but the rare disease of anthrax, which attacked only a tenth of the number of people, was responsible in Great Britain, in 1905, for almost as many deaths. The figures for the past five years show that only one case of lead poisoning in twenty-eight proves fatal; the chances of life to a person attacked by anthrax are no more than three to one. Other forms of poisoning, including phosphorus, mercurial and arsenical, are almost a negligible quantity. The following summary shows concisely the relative danger to the victims of industrial disease:

	Lead Poisoning.		Other Poisons.		Anthrax.	
Year.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1901	863	34	34	1	29	10
1902	629	14	14	2	38	9
1903	614	19	13	..	47	12
1904	597	26	9	1	50	10
1905	592	23	12	1	59	18
Average of 5 years	659	23	16	1	47	12

Modern scientific improvements have very materially reduced the danger of lead poisoning, but anthrax, which seems inseparable from the handling of wool, hair and hides, has rather tended to become more serious, and the deaths last year were half as many again as the average for the past five years. Of the 592 cases of lead poisoning in 1905, 90 occurred in white-lead works and 84 in the china and earthenware industry, but the ratio of deaths to cases was highest in the glass-cutting and polishing industry. Much bigger figures are to be found in the records of industrial accidents. Last year 4,375 men died as the result of injuries received in the course of their employment. That total represents 600 more deaths than in 1904 and 121 more than the yearly average since 1901. There was a marked increase of fatalities in the shipping trade, 1,525 seamen losing their lives, as compared with 1,049 in 1904. A seafaring life is the most dangerous which finds a place in the board of trade statistics, as the following table of death rates will show:

	Per 10,000 Employed.
Seamen	58.06
Miners	12.88
Quarrymen	10.73
Railway men	8.01
Non-textile factories	2.23
Textile factories	0.72
Average of all occupations	6.56

It would be interesting, if possible, to compare the above figures for those of the same occupations in the United States.

Why the Death Rate of Norway Is Low.—Marcou (*Archives Gén. de Méd.*, Dec. 5, 1905), states that there are three reasons for the physical welfare and low death rate of the Norwegians: 1. Norway is a collection of village communities without great urban concentrations. 2. It has neither excessive riches nor excessive poverty. 3. It has the best schools in Europe. Its successful management of the alcohol question is merely a corollary to these. With a total population of about 2,500,000, it has only one city of importance, Christiania; the other towns give rather the impression of large villages. Seventy-two per cent. of its population is rural and there is no proletariat such as exists in other European countries. The primary and obligatory school course lasts seven years, and a large place is given in the instruction to hygiene and manual training. It is to this admirable system that alcoholism has been so successfully combated in Norway. In 1847 there were 1,101 wine merchants; in 1900 there were 130. Since 1894 the sale of liquors has been absolutely prohibited in the country districts; only the wholesale trade is free in the towns. Retail sale of liquor is permitted in the towns only by popular vote, women over 25 being permitted to vote, and if permitted the sale is conducted by a commission (Samlag), the profits can not exceed 5 per cent., and are devoted to charities, etc., the idea being to diminish the sale and not to secure revenue as in Russia, where the object is to enrich the state. During his stay in Norway of a month's duration Marcou says he did not see a single drunkard. The Norwegian birth rate is not excessive, 30 to the 1,000, but the mortality is low, 14 to the 1,000 population. In infants under one year the mortality is 104 to the 1,000, as compared with 20 to 23 in France and 35 to 40 in Russia. Hence the population increases. The Norwegians are hearty eaters, but are not vegetarians. Aside from potatoes they use but little vegetable food. They consume immense quantities of salt meats, and their diet is theoretically very unhygienic, but they do not show it. Marcou says that seeing the beautiful old age of the Norwegians who are all their lives absorbing toxins at high pressure made him begin to question the origination of arteriosclerosis from the accumulation of alimentary toxins.

Galvanic Treatment of Habitual Constipation.—M. W. Peyser (*Old Dominion Journal*) employs a short, soft rubber rectal tube in which is placed a metallic conductor, is passed into the rectum, coiling in the ampulla being prevented if possible. The metallic conductor is attached to the positive pole. The tube is connected with the tube of a fountain syringe which contains saline solution. A large pad electrode well moistened with saline solution or thoroughly soaped, is attached to the negative pole. While the solution is flowing, or after the syringe is emptied, the current is turned on and gradually increased in strength till from 15 m.a. to 20 m.a. are passing, or till the patient complains of burning at the negative pole. There should be no sensation from the current at the positive pole. The solution in the bowel acts as one of the terminals, thus spreading the current over a large extent of surface and permitting more current to be used. Similarly, the large pad permits increased amperage. In a varying period of time desire for defecation comes on—sometimes immediately, sometimes not for several hours. Should it come immediately, the patient should be persuaded to endeavor to continue the treatment for a while longer. The number of treatments required varies from six to ten, rarely less than the former or more than the latter. The tolerance of the patient should be the standard as to the quantity of current, some taking 20 m.p. even at the first treatment, others never being able to take more than 12 m.p. at any. The time of each treatment should be from fifteen to twenty minutes, seldom more, repeated daily till positive effects are obtained, and then at lengthening intervals till success is assured or failure manifest.

Disinfection by Formaldehyd.—Disinfection by formaldehyd has tended to replace the use of sulphur on account of the greater convenience and especially because of the bleaching effect of sulphur. The methods of formaldehyd disinfection have been somewhat troublesome on account of the difficulty of vaporizing a sufficient amount of the gas from the solution and various lamps, machines, etc., have been devised for facilitating the operation. Stewart of Philadelphia, in *American Medicine*, concludes, after experimenting with various machines, that the simplest way after all is to wet the exposed surfaces with a 20 per cent. solution. This is disagreeable, however, on account of the irritating vapor evolved. When the gas is liberated slowly the penetration has frequently been imperfect so that a better method will be warmly welcomed. According to a bulletin of the Illinois State Board of Health, 1906, a method of using potassium permanganate to accelerate the evolution of the gas was first suggested in 1902-3. It has since been tested thoroughly by the State Board of Health of Maine, and its efficiency demonstrated by bacteriologic tests. These tests have been repeated and the results confirmed by the New Hampshire State Board of Health (*Sanitary Bulletin*, January, 1905), and by the Illinois State Board of Health. (Circular above referred to.) The method is very simple, requiring no apparatus except a tin pail of sufficient capacity, best made with flaring top. It is made with a double bottom with one-quarter-inch air space between the layers of tin, and is entirely covered on the outside with asbestos paper. Instead of this apparatus an ordinary milk pail, set into a pulp or wooden bucket, will answer every purpose. The room is sealed, fine needle-shaped crystals of potassium permanganate (3½ ounces to each 1,000 cubic feet of air space) are placed in the container. Over this salt is poured 40 per cent. solution of formaldehyd (1 pint for every 1,000 cubic feet of air space). The operator should leave the room quickly, as large quantities of gas are at once evolved. The results of laboratory experiments have shown that the gas thus evolved acts more thoroughly on account of its great concentration and kills very resistant micro-organisms, even when concealed under several thicknesses of cloth. The Maine Board of Health recommends 6½ ounces of permanganate and 2 pints of formaldehyd solution for every 1,000 cubic feet. Presence of moisture in the air is essential. The disinfection of the room, the woodwork, furniture and floors with liquid disinfectants (mercury bichlorid 1 to 1,000) is as important in this mode of disinfection as in any other. The method requires the use of common and relatively cheap chemicals so that it is estimated that the disinfection of 1,000 cubic feet costs about 75 cents. Based on this method proprietary preparations are on the market under fanciful names and for which extravagant claims are made, but they are in no way superior to the simple method and their use should be avoided because of the uncertainty as to the amount of gas they will evolve.

Book Notices

MEDICAL DISEASES OF INFANCY AND CHILDHOOD, with Points on the Anatomy, Physiology and Hygiene Peculiar to the Developing Period. By A. C. Cotton, A.M., M.D., Professor of Pediatrics, Rush Medical College, University of Chicago; Attending Physician for Diseases of Children, Presbyterian Hospital, etc. Cloth. Pp. 670. Price, $3.50. Philadelphia: J. B. Lippincott Co., 1906.

It is impossible to review a book of this size in detail. Part I is practically a revision of the author's previous published "Lessons on Anatomy, Physiology and Hygiene of Infancy and Childhood," and is very satisfactory indeed. We can commend highly the good judgment shown in the treatment of the much discussed subject of infant feeding. We think the author makes a mistake in recommending spring scales for weighing babies, as the result obtained with them can not be anything but inaccurate. The arrangement of the other parts of the book is unsatisfactory and the terminology bad, diseases and symptoms being badly confused. While it is not difficult to pick out minor defects in this book, as in others, on the whole the text is most satisfactory. The book is full of good sense and sound advice. It is fully up to date in every way. In his preface the author asks the indulgence of the reader for a flavor of dogmatism. We are inclined to think, however, that he is not dogmatic enough, but rather too much inclined to give all the theories on debatable points. The directions for treatment are practical and rational. The illustrations are, on the whole, good. We can not refrain, however, from referring to the spelling of the parts of the fetal circulation in the cut on page 31, hypogastric being called, for example, hunecastric, and umbilicus, umbilious.

DISEASES OF THE NOSE AND ITS ACCESSORY SINUSES. By H. L. Lack, M.D., F.R.C.S., surgeon to the Throat Department of the London Hospital and Lecturer on Diseases of the Throat to Its Medical College, etc. With 124 Illustrations. Cloth. Pp. 399. Price, $8.50 net. New York: Longmans, Green & Co., 1906.

The brevity yet completeness of the descriptions, the simplicity of the style, as well as the choice illustrations, will make this a handy book for reference. References are mostly from English and European authors, little mention being made of American methods and writings. After a chapter dealing with the normal anatomy of the nose, the author gives technic of examination and general treatment, then proceeds to deal with the various disorders of the nose and accessory sinuses. An appendix contains a large number of useful formulas.

State Boards of Registration

COMING EXAMINATIONS.

NEVADA State Board of Medical Examiners, Carson City, August 6. Secretary, S. L. Lee, Carson City.

CALIFORNIA State Board of Medical Examiners, San Francisco, August 21. Secretary, Chas. L. Tisdale, San Francisco. (Applications must be in August 4.)

California Announcement.—The next examination of the California Board of Medical Examiners will be held Aug. 21, 1906, but all applications must be filed on or before August 4, at which time all documents will be passed on by the board.

Pennsylvania June Examination.—The annual spring examination of the State Board of Medical Examiners was held in Philadelphia, June 19 to 22. Representatives of nearly every state in the union as well as of a dozen foreign countries were among the 414 persons who took the examination. One of the candidates, an Italian and a graduate of an Italian university, was expelled for "cribbing." It is probable that he will not be allowed the opportunity of another examination. The following questions were asked:

ANATOMY.

1. Describe bone, giving (a) its constituents; (b) stating which constituent increases with old age; (c) what are the periosteum and endosteum; (d) the medulla or marrow, and (e) whether bones receive blood from other vessels than those of the periosteum. 2. Describe the acetabulum, and name the bones that enter into its formation. 3. Give a general description of the parotid gland and its relations. 4. Describe the trachea and bronchi, give their important relations. 5. Describe the pancreas and name the organs and structures with which it is in contact, and give its outlet, blood and nerve supply. 6. Describe the clavicle and mention the various muscles which should be considered in its fracture and dislocation. 7. Describe the internal and external abdominal rings, where located, and name the structures found therein. 8. Bound Scarpa's triangle, and name the structures contained therein. 9. Describe the anterior, external and internal annular ligaments of the ankle joint and name the structures that pass beneath them. 10. Bound the axillary space and name the structures within it.

THERAPEUTICS AND PRACTICE.

1. Name some of the chief alkaloids of opium, and state the therapeutic differences in the use of opium and morphin. 2. Explain the therapeutic indications for the relief of uremia and outline a method of treatment. 3. Name some of the astringents used in the treatment of diarrhea, and indicate the different kinds of diarrhea in which they are of service. 4. What do you understand by the therapeutic limit of a drug, and what is the therapeutic limit of opium, of digitalis, of strychnin, and of the bromids. 5. Name some of the coal-tar products used as antipyretics and describe their indications and contraindications. 6. Describe the symptoms and treatment of an acute cerebral hemorrhage. 7. State the symptoms of gastric cancer and ulcer, and give an appropriate treatment for each. 8. Define pericarditis, and describe its etiology, symptomatology and treatment. 9. Describe the treatment for vomiting of cerebral origin and that due to acute gastritis. 10. What are the indications for the administration of a cardiac depressant in pneumonia, and when would you use a cardiac stimulant in that disease?

DIAGNOSIS.

1. Differentiate pyemia and septicemia. 2. Differentiate intestinal colic and obstruction of the bowels. 3. Differentiate gastralgia and hepatic colic. 4. Differentiate chronic glaucoma, conjunctivitis and cataract. 5. Differentiate drunkenness and the various forms of unconsciousness.

HYGIENE.

1. How would you prevent malaria? 2. How would you prevent smallpox? 3. Describe a method for the disposal of human excrement, where there is no sewage system. 4. What precautions

should be taken in school rooms to protect the sight of scholars? 5. What fundamental principle is often disregarded for the sake of economy, in heating buildings by the direct hot-water or steam systems?

OBSTETRICS.

1. Aside from criminal procedures, what are some of the most potent causes of abortion and miscarriage, and when do they most frequently occur? 2. Give causes and treatment of adherent placenta. 3. Describe the management of labor in a presentation of the anterior fontanelle. 4. Describe the symptoms, respectively, of ectopic pregnancy and hydrosalpinx. 5. Give causes and treatment of antepartum hemorrhage. 6. Name some of the diseases or conditions which might complicate pregnancy or be mistaken for it. 7. Describe the management of a transverse presentation. 8. What conditions and symptoms would lead you to fear eclampsia, and how would you treat it? 9. Describe the sutures and fontanelles of the fetal cranial vault, representing their diagnostic value in labor. 10. Give conditions calling for the application of forceps, and tell when you would perform version in preference to instrumental delivery.

CHEMISTRY.

1. Differentiate albumin and mucin and give tests for each. 2. If the copper reaction is doubtful in a test for glycosuria, give a positive test. 3. Describe a test for the presence of formaldehyd in a suspected substance, and also state its chemical properties and uses. 4. Detail a method of detecting lactic acid in the presence of hydrochloric acid and state its significance. 5. State how hemoglobin can be recognized and name a test.

MATERIA MEDICA.

1. Give the standard alkaloidal strength of gum opium and powdered opium and state (a) which form is used in official preparations; (b) the color test for morphin; (c) the effect opium exerts on salivary and intestinal glands. 2. State what scopolamin is and describe in detail its use. 3. Give the official terms, the parts used and the active principles of henbane, foxglove, monkshood, deadly night shade and quaker button. 4. Describe the medicinal properties of colchicum and name the official preparations and the doses of each. 5. Properly write a prescription in Latin for twelve powders containing either calomel, Dover's powder, saltpeter, pepsin and sugar of milk.

SURGERY.

1. Name the different procedures for removal of stone from the urinary bladder and describe one operation. 2. Give the clinical history and describe the operation of appendectomy. 3. Describe Pott's fracture and give its treatment. 4. What are the various forms of abdominal hernia and how should they be treated? 5. Give the symptoms and treatment of a penetrating wound of the urinary bladder. 6. Give the symptoms and treatment of a dislocation of the head of the radius. 7. Give the contraindications against the administration of chloroform and of ether for anesthesia. 8. Give the causes of intestinal obstruction and the symptoms and treatment of any one type. 9. State the indications for intravenous, saline infusion and give the technic of the procedure. 10. What are the signs or symptoms, respectively, of cerebral concussion and cerebral compression, and the treatment for each.

PHYSIOLOGY.

1. Explain the production of the normal respiratory sounds, describe and classify them, and state when, and at what location of the thorax they are heard. 2. What is accomplished physiologically by the bile? 3. Describe the physiologic conditions which influence intestinal peristalsis. 4. Describe the contractions of the muscles, of the arteries and veins during the passage of the blood from and back to the heart. 5. Enumerate the functions of the cerebellum.

PATHOLOGY.

1. Describe the cardiac changes that occur in mitral stenosis, and explain why and how they are caused. 2. What is jaundice and what conditions are capable of producing this symptom? 3. State the pathologic changes that occur in anyone from pleurisy. 4. Define and describe inflammation. 5. Discuss the morphology of the *Bacillus tuberculosis*, its sources and modes of entry into the human system; its products and the effects on tissues, and avenues by which general systemic infection occurs.

Pennsylvania Homeopathic Medical Examination.—The regular spring examination of the homeopathic medical examining board was held in Philadelphia during the week ending June 23.

North Carolina May Report.—Dr. George W. Pressly, secretary of the Board of Medical Examiners of the State of North Carolina, reports the written examination held at Charlotte, May 23-31, 1906. The number of subjects examined in was 7; total number of questions asked, 67; percentage required to pass, 80. The total number of candidates examined was 128, of whom 87 passed and 41 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Chattanooga Med. Coll.	(1904)	80.7
Jefferson Medical College, (1901) 84.1; (1904) 80.5, 81.8, 89.8; (1905) 93.8; (1906) 81.2, 82.8, 88.5, 90.5, 91.4, 91.7, 93.		
University of North Carolina, (1906) 83.4, 85.1, 85.8, 86.7, 88, 88.5, 89.4, 90.4.		
Georgetown University	(1905)	80.2, 85.4
University of Maryland, (1904) 80.4; (1905) 80, 81; (1906) 80.8, 86.7.		
North Carolina Med. Coll., (1903) 82.2; (1905) 80.1; (1906) 80, 80.1, 80.1, 80.7, 81.1, 81.2, 82.5, 83.8, 83.7, 84.1, 84.4, 84.5, 85.2, 85.7, 88.1, 88.8, 89.1, 90.2, 90.5.		
Woman's Med. Coll. of Pennsylvania (1900) 84.4; (1906)		93.4
Knoxville Med. Coll.	(1904)	81
George Washington University (1904) 90.8; (1906)		83.2
University of Pennsylvania	(1901)	91.4
College of P. and S., Baltimore (1906) 80.1, 85.1, 86.1, 88.2		
University College of Med., Richmond, (1906) 82.7, 85, 85.5, 86.2, 87.2.		
University of Buffalo	(1905)	82.1
University of Virginia (1903) 87.1; (1905)		80.2
Baltimore Med. Coll. (1903) 80.5; (1904) 80.; (1906)		80.4
University of the South	(1898)	81.2
Medical College of Virginia	(1906)	80, 82.2
Howard University	(1903)	81
Chattanooga Med. Coll.	(1894)	81.7
Meharry Med. Coll.	(1904)	80.7
Leonard Med. Coll. (1906) 80, 81.4,		85.1
Vanderbilt University	(1893)	80
Johns Hopkins University (1903) 94.2; (1904)		90
Kentucky University	(1905)	83.8
College of P. and S., New York (1903) 82.5; (1904)		88.8
College of P. and S., Atlanta	(1900)	80.2
Columbian University	(1892)	83.4

FAILED.

University of Maryland, (1903) 64.7; (1904) 56.8; (1905) 74.3; (1906) 77.1.		
Trinity University, Toronto, Canada	(1888)	63.4
Leonard Medical College (1905) 59, 66.5; (1906) 67.2,		72.7
Meharry Med. Coll.	(1902)	56.8
Chattanooga Medical College (1900) 46.5;	(1903)	77.2
Atlanta Med Coll.*	(1898)	57.2
College of P. and S., Atlanta	(1900)	63.4
Tennessee Med. Coll. (1894) 67.1; (1901) 71.8; (1904) 47.1, 48.4; (1905) 75		
Hospital College of Med.	(1904)	43
University of Nashville	(1900)	56.8
George Washington University	(1905)	76.1
Southern Medical College, Atlanta*	(1888)	67.8
North Carolina Med. Coll., (1902) 75; (1905) 60, 72; 73.5; (1906) 74.7, 77.7.		
Maryland Med. Coll.	(1905)	73.1
Med. Coll. of South Carolina	(1906)	74.4
University of Louisville	(1893)	65.2
University of Tennessee	(1905)	62.8
Knoxville Med. Coll.	(1904)	68.7
Kentucky University	(1904)	72.8
University of the South	(1905)	76.7
Medical College of Virginia	(1905)	70.5
College of P. and S. Baltimore	(1905)	65.1
University of North Carolina	(1906)	71.1, 71.2, 74.4

* In 1898 these two colleges merged to become the Atlanta College of Physicians and Surgeons.

The following questions were asked:

ANATOMY.

1. Describe the atlas and name the bones with which it articulates. 2. Describe the ankle joint, name its ligaments (do not describe them) and name the bones which enter into its formation. 3. Locate and describe the mitral (left auriculoventriculo) valve of the heart. 4. Give the relations of the head of the pancreas. 5. Describe the spongy portion of the male urethra (do not give its histology.) 6. Name the nerves which supply the muscles of the eyeball, mentioning the muscle or muscles which each supplies. 7. Describe the Eustachian tube. 8. Give the relations of the third portion of the subclavian artery. 9. Give the relations of the female bladder. 10. Describe the median nerve (do not give its relations) and name the muscles or group of muscles it supplies.

N. B. Answer only eight (8) questions.

OBSTETRICS, GYNECOLOGY AND PEDIATRICS.

1. (a) Describe a normal ovary. (b) Give symptoms of pregnancy at end of second month. 2. Give etiology, prognosis, symptoms and treatment of concealed accidental hemorrhage. 3. Name risks to mother and child in breech presentations. 4. Give origin and distribution of uterine vessels and nerves. 5. Give causes and treatment of menorrhagia and of metrorrhagia. 6. (a) Give diagnosis of cancer of cervix uteri. (b) Give treatment of chronic cystitis. 7. Give written instructions for artificial feeding of an infant one week old. 8. Give symptoms and treatment of rickets. 9. Give location of lesions and symptoms of poliomyelitis.

MATERIA MEDICA AND THERAPEUTICS.

1. State the physiologic action of opium; dose of extract, tincture and camphorated tincture. Mention two most important alkaloids and dose of each. Antidotes in case of poisoning. 2. Give dose of tinctura aconiti; parts used, physiologic action. 3. Dose of caffein; its action on the system. 4. Explain laxative action of magnesii sulphas; oleum ricini; aloe, dose of each. 5. Principal alkaloid of pilocarpus; dose and physiologic action. 6. Physiologic action of acidum carbolicum; dose; chemical antidotes. 7. Explain action of apomorphin hydrochlor; dose. From what is it made. 8. State the effect on the heart of medicinal doses of nitroglycerin; digitalis; and strychnia. 9. Physiologic action of physostigma; dose of tincture; name the principal alkaloid and dose. 10. Physiologic action of oleum terebinthinæ; dose, symptoms of overdose. 11. If there are any reasons why the following prescriptions should not be used state them:

1. Pot. iod. Spts. etheris nit. Aquæ.	2. Pot. permang. Glycerinæ. Aqua.
3. Morphiæ sulph. Aq. lauro cerasi.	4. Basham's mist. Tr. digitalis.
5. Pot. iod. Acid. nitro-hydrochl. Tr. cinch. co.	6. Am. chloridum. Syr. scillæ.
12—1. Am. Carbonat. Syr. scillæ. 3. Pot. chlorat. Acid. tannic.	2. Pot. iod. Coros. subl. 4. Quin. sulph. Sodii salicyl. Acid. sulph. Aqua.
5. Am. chlorid. Pot. chlorat. Aqua.	6. Strych. sulph. Potassii iod. Syr. sarsap. Co.

Answer any ten questions, No. 1 included.

PHYSIOLOGY AND HYGIENE.

1. What is the capacity of the normal bladder? 2. What portion of gastrointestinal tract accomplishes the greatest amount of absorption? 3. What color is the blood in the pulmonary artery, and why? 4. What is the function of the bronchial artery? 5. Name the forces that keep the blood in circulation. 6. What is a vasomotor nerve? 7. In the event you destroy the gyrus fornicatus, what happens? 8. In the event you divide the anterolateral columns of the spinal cord, what happens? 9. Give location of center of speech. 10. What pathologic bacteria most commonly pollute drinking water.

SURGERY.

1. Give the diagnosis of suppuration. 2. Give the causes of gangrene. 3. Define (a) septic intoxication (b) septicemia (c) pyemia. 4. Give symptoms of internal hemorrhage. 5. Give symptoms and treatment of fracture of middle third of femur. 6. Give symptoms of fracture at base of skull. 7. Give causes of intestinal obstruction. 8. Give symptoms of acute perforating appendicitis. 9. Give symptoms and treatment of ischio-rectal abscess. 10. Give causes of retention of urine.

CHEMISTRY.

1. Define the following terms, viz.: synthesis, equation, valence, dialysis, symbol. 2. Name the colors of the solar spectrum in their order. 3. The physical properties of a chemical element are as follows, viz.: An invisible, colorless, tasteless, odorless gas, heavier than air, s. g. 1.10 (air = 1), slightly soluble in water; 3 per cent. found in natural water; affinities of great power and wide range, combines with every other known element except fluorin and the argon group. What is the element? What is its distribution in nature? 4. Convert the following to grains and ounces: 3 grams, 50 grams, 500 c.c. 5. Give average composition of human and cow's milk. 6. Give composition of chalk stones of gout; of gallstones or biliary calculi. 7. Given a specimen of urine for examination, name ten things you would do, in their order. 8. What salts are insoluble in warmed urine, but are dissolved on addition of acetic acid? 9. About 1 in. of suspected urine is mixed in a test tube with ½ in. of a saturated solution of picric acid and ½ in. of liquor potassa. On boiling this yellow mixture for one minute a slight deepening of color may occur in normal urine, owing to reduction by uric acid and kreatinin, but a dark mahogany-red color would denote what? 10. Write name of each formula in the following equations:

$$C_2H_5OH \text{ plus } H_2SO_4 = C_2H_5HSO_4 \text{ plus } H_2O$$
$$C_2H_5HSO_4 \text{ plus } C_2H_5OH = H_2SO_4 \text{ plus } (C_2H_5)_2O.$$

PRACTICE OF MEDICINE.

1. Give diagnosis between intestinal colic and localized peritonitis. 2. In chronic dysentery what character of lesions exist and where are they located. 3. Define cerebrospinal meningitis, giving cause of the disease and anatomic lesions. 4. What are the causes of relapses in typhoid fever? 5. What is meant by the term "gray hepatization" in pneumonia? 6. Define chlorosis and write a single prescription for it. 7. Name the cardiac affections in the order of their frequency that complicate acute articular rheumatism. 8. Give medical treatment for acute cystitis. 9. Give treatment for case of pleurisy with effusion. 10. Give briefly medical treatment for a case of chronic interstitial nephritis.

Travel Notes

DISEASES AND HOSPITALS OF THE EAST COAST OF AFRICA.

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CHICAGO.

ZANZIBAR, AFRICA, May 24, 1906.

The east coast of Africa is not often visited by American physicians, and for a knowledge of the diseases which prevail there we must rely almost exclusively on English, and recently on German, literature. We have always looked on tropic Africa as the very embodiment of a disease-producing country, made so by the high temperature which prevails here throughout the entire year, and by the presence of pathogenic parasites found in no other climate to the same extent or at all.

To see and learn something for myself of those parts of Africa which have recently attracted so much attention owing to the opening up of new colonies, possessions and protectorates by different European powers, I decided to extend my trip from Lisbon to Africa, to circumnavigate the continent, and to penetrate into its interior from Beira as far as the Victoria Falls of the Zambesi, thence to go south to Cape Town, and from there homeward by steamer via Southampton. I have the pleasure and comfort on this trip of my friend, Dr. L. L. Seaman of New York, who, like myself, is interested in visiting the hospitals of foreign lands and in studying the diseases of the tropics. I made the calculation that this long trip, with the many stop-over places, would take four months, and here I am in Zanzibar, about half of the distance, in less than one-half of the expected time. I will relate in this communication as briefly as possible the result of my observations so far made on the subjects indicated by this title.

MOMBASA.

Mombasa is a city of 20,000 inhabitants, located on a small coral island of the same name. It is under British protection and has become the gateway to British East Africa by the construction of a railroad connecting the city with Lake Victoria Nyanza, a distance of 600 miles. The great and fertile country of Uganda, which promises much for European settlers and is at present the hunters' paradise, can be reached now by rail in two days. As naturally would be expected, the opening up of such a vast and rich country has resulted in a great boom of real estate in Mombasa, and all along the line of the road. Mombasa has become a little Chicago, and is destined to become, in the near future, the center of vast commercial interests. So far only about 100 white people live here, the great bulk of the population being made up of Swahili, Arabs, Hindus, and representatives of various tribes from the interior. The climate is severe, as Mombasa is only 4 degrees south of the equator. Not many Europeans hold out longer than three years, when they must seek a cooler climate to recuperate, and only too frequently, for complete convalescence from malaria. The natives are extremely lazy, thriftless and indifferent to the advantages offered by attempts to bring them under the influence of civilization.

MOMBASA HOSPITALS.

Nearly all diseases of the tropics can be found here. Mombasa has two hospitals, one for the Europeans and one for the blacks. The former is called Mombasa Hospital, which is in charge of Dr. Goldie, and the latter is the Native Hospital, under the care of Dr. Norman Leys. Both of these physicians are in the employment of the Protectorate Service. As the Europeans are few in number, not exceeding 100, the hospital space required for them is not large. The Mombasa Hospital is beautifully located on a bluff, near the edge, and facing the harbor. It is a handsome two-story building, with wide verandas on two sides on each floor, imparting to it a pleasing and comfortable appearance. Built of rough stone, with cement coating, it is a very attractive building. The interior arrangements of the hospital and the furniture remind one more of living in a private house than in a place for the sick. It has accommodations for only eight patients. At the time of my visit only two of the rooms were occupied, one by a patient suffering from pneumonia, the other by a patient with malaria. Mombasa has no trained nurses.

The Native Hospital, located near the old harbor on the opposite side of the island, has forty beds, or rather cots. The cots are low frameworks of wood, the open spaces spanned over with string cords placed crosswise, on which thin mattresses are placed; neither sheets nor pillows. Only about half of the cots were occupied. The hospital consists of three one-story cottages constructed entirely of corrugated iron, with the exception of the wooden floor. Besides the cots there were only a very few articles of the cheapest and plainest furniture. All indigent blacks are admitted free; those who are better situated pay what they can toward the support of the hospital. The hospital has no special room for operations. The government support is entirely inadequate. Few women seek hospital treatment, and among all of the patients I did not see a single child. The Swahili does not think enough of his babe to send it to the hospital for treatment, and does not like to part with his older children, who amuse him, for any length of time.

In a part of one of the cottages, partitioned off from the rest, I found five or six female patients. In this little ward the patients are left to take care of themselves, rendering each other such services as they can in the way of nursing. A dresser and native helper take care of the male patients. Malaria, ulcers of the legs, and ankylostomiasis formed the bulk of the diseases for which the patients were under treatment. The thymol treatment for the last-mentioned disease is still in vogue here, although it has been shown recently that beta naphthol, in the same dose (half a dram), is more

effective and less disagreeable to the patient. Malaria is quite common in the city and surrounding country. The natives are beginning more and more to be affected with pulmonary tuberculosis; on the other hand, tuberculosis of the lymphatic glands, skin, bones and joints has so far spared the blacks. Lepra and elephantiasis are seen occasionally, but are not so common as in the West Indies and South Sea Islands. Beriberi is not very prevalent, but isolated cases find their way into the hospital. Both of the physicians whose names I have mentioned in connection with the two hospitals, have lived in Africa for a number of years, and neither of them has ever seen a case of carcinoma in the blacks. For drinking water the population of Mombasa depends entirely on rain water, as the well water is unfit to drink, and probably on this account typhoid fever has so far spared the city. Keloid is very common, and I saw in the hospital a woman, the subject of small multiple keloids widely diffused over the back and chest, unquestionably caused by the sting of insects.

Syphilis and gonorrhea prevail to a frightful extent, the former pursuing a rather severe course. From the latter the patients recover in a short time, without treatment. Stricture as a remote consequence is occasionally met with, but is by no means common. Black-water fever (neglected cases of malaria) and relapsing fever (caused by sting of a tick found in native huts) are frequently seen. The most fatal of the acute diseases is pneumonia. A patient in the hospital who had recently passed through a typical attack of this disease remains in a very weak condition, and physical examination of the chest reveals dullness over the apex of the same lung, and other physical signs suggestive of acute tuberculosis developing on a pneumonia basis. Dysentery is not a frequent disease, and usually yields promptly to high-seated injections of some mild, safe antiseptic. Constipation is a common ailment, and patients in large numbers seek the dispensary in search of laxatives. Appendicitis among the blacks has never been observed here. Stones in the kidney and bladder and prostatic hypertrophy do not affect the natives.

A dispensary, centrally located, is conducted by Dr. Leys, in connection with the Native Hospital. This is well patronized, as on an average about fifty patients apply daily for treatment. Chronic malaria and ulcers of the leg form a large part of the clinical material. What the government service is in sore need of is a more liberal financial support. The present striking defects are entirely due to inadequate funds. The monthly allowance for the care of the sick does not exceed $60, and that is judiciously expended, but does not meet the most urgent needs. This same evil is only too apparent in most of the British colonies, and protectorates in which the subjects have to depend on the home government for support, and can not receive too soon the serious attention of the authorities who are responsible for it. The colony that does more for the sick and poor than any other is Australia, and it is that country, financially independent of its parent, which makes the best provisions for medical education, far better than Old England herself.

TANGA.

I approached German East Africa with a keen interest and a vivid expectation to satisfy my desire to learn from my own observation what Germany and her men of science were doing for their black subjects in the way of preventive medicine and in the treatment of the sick. In Mombasa we heard nothing of preventive medicine and saw how inadequate were the provisions for the sick. I had reason to expect that in these matters I would find Germany ahead of all other countries who have undertaken to better the conditions of the savages and claim them as their subjects, and in this expectation I was not disappointed. So far as preventive medicine is concerned, Germany leads at home and in her few recently-acquired colonies. Tanga was the first city that I visited on German African soil, and it was there I first became familiar with what German science was doing to prevent and combat the diseases of the tropics.

Tanga, inclusive of the villages in its vicinity, has a total population of 20,000. The population, like that of every city on the east coast of Africa, is a very mixed one, including only about 100 whites, the rest being Swahili, Arabs and Hindus. It has an excellent harbor, and from here the interior of the country is being made accessible by the construction of a railroad, of which about 100 miles has been completed, and is now in operation. The traveler can now reach the beautiful, fertile and healthy Usambara high-mountain plateau by rail. The road will be extended farther into the interior of the country, and will reach other desirable localities for European settlers. The old village of huts was all cut up in making the wide, fine streets, which are the pride of the city. The public buildings of stone and cement, with tile roofs, would do credit to any of the smaller cities in Germany. There are no horses and carriages here; a man trolley line takes their place. The soldiers here, like elsewhere in the colony, are blacks from the Soudan, New Guinea, Somaliland and Zululand, under the command of white officers. They have won for themselves a good reputation for courage and discipline. The business part of the city is dull as compared to its British rival, Mombasa.

TANGA HOSPITALS.

Tanga has only one hospital, the Tanga Government Hospital. It was built and is maintained at the expense of the imperial government. Under the same administration, but on separate parts in the same spacious park-like grounds, are located the magnificent modern hospital for Europeans and three one-story pavilions, or barracks, for negroes. The hospital for Europeans faces the harbor and presents from there an imposing appearance. It is built, like all of the important public buildings, of uncut coral rock, coated inside and outside with a thick cover of cement. The many large windows, white walls, arched verandas and red tile roofs impart to it an appearance of outside architectural beauty and inside comfort. This building was completed three years ago at an expense of $75,000. It has room for twenty patients, much space being taken up by the spacious hallways, dispensary and store rooms. The entire management of the institution is in charge of Professor Ollwig, who at the same time attends to the administrative and medical needs of the native hospital. There are four German Red Cross nurses on duty; two of them take care of the European patients, and two of them are employed in the bacteriologic laboratory of the hospital and in carrying into effect the prophylactic treatment of malaria. The drug room is also in charge of these nurses. Nurses sent here from Germany receive special instruction to prepare them for these special duties. Their term of service is two years. While we were in the laboratory, engaged in scanning slide after slide of blood specimens from different patients and localities, one of these nurses spotted a filaria and her microscopic diagnosis was at once verified by a critical glance of Professor Ollwig. These nurses are a very important aid in ascertaining the existence of, and in locating the tropic diseases in the district to which they belong.

Professor Ollwig, the director of the hospital, has been in East Africa for twelve years. He is a distinguished scientist, who for that length of time has made malaria his special study. He was the right-hand man of Professor Koch in his first expedition to this part of Africa, and he undoubtedly knows more about malaria than the distinguished bacteriologist himself. He has returned to Germany only twice on short vacations during his long residence in this trying climate, and has retained to a remarkable degree his physical strength, mental activity and unremitting enthusiasm in his work. Although he is no surgeon—according to his own statement—he performs all operations in both departments of the hospital. The operating room is all that any surgeon could possibly desire, and is supplied with all necessary instruments and equipment for surgical asepsis. I was astonished to ascertain that none of the hospitals in German East Africa possess a Roentgen apparatus, in face of the fact that more or less fighting is going on every day in the interior of the colony, and that this condition of affairs between the whites and the natives will be kept up for a long time before a general submission to the new rule can be effected. With all other conveniences that the hospital offers for good surgical work, very few operations are performed except in traumatic cases. The natives take anesthetics well, and wounds usually heal promptly, by primary intention.

The cottage hospital for the blacks consists of three one-story pavilions, built of the same material as the principal building. As everywhere else on the coast, the majority of the patients under treatment were affected with malaria, ulcers or ankylostomiasis. These pavilions furnish room for 100 patients, so that the whole capacity of the hospital amounts to 120 beds. In one of the pavilions I found a number of women who had brought their thin little infants at the breast with them; these remain with their mothers as long as they are in the hospital. The nursing is done by native attendants, who have received a little instruction and training in the care of the sick.

When I came to the entrance of the main hospital, accompanied by Professor Ollwig, on whom I had called at his princely residence on the same grounds, a native boy dragged a large beheaded snake, attached to a string, to the very door. The beast was striped and mottled, about four feet in length, with a thick body, and short, abrupt tail. The snake was killed only a few minutes before in the hospital grounds, and the vermicular movements of the body were still going on. The professor, who inspected it, said it was a viper, the most venomous snake of East Africa. Vipers in the grass, anopheles in the air, tsetse flies in the bushes, scorpions and other poisonous insects crawling about, make a visitor who is unused to such carriers of deadly venom and disease-producing microorganisms feel a little chilly, even when exposed to the scalding rays of the tropic sun. The tropics have their attractions, but they are not devoid of lurking sources of danger, of which we, living in a temperate climate, know very little.

(To be continued.)

Society Proceedings

COMING MEETINGS.

American Orthopedic Association, Toronto, Canada, Aug. 20-21.
British Medical Association, Toronto, Canada, Aug. 21-25.
American Roentgen Ray Society, Niagara Falls, Aug. 29-31.
Am. Academy of Ophthal. and Otolaryn., Detroit, Aug. 30-Sept. 1.
Western Surgical and Gyn. Ass'n., Salt Lake City, Aug. 31-Sept. 1.

STATE MEDICAL SOCIETY OF WISCONSIN.

Sixtieth Annual Meeting, held at Milwaukee, June 27-29, 1906.

The society is growing rapidly and proving to be most successful under the régime of its new constitution. Its membership is over 1,450, and the attendance at the meeting was about one-fourth of the membership.

Officers Elected.

The following officers were elected: President, Dr. L. H. Pelton, Waupaca; vice-presidents, Drs. A. J. Burgess, Milwaukee; W. E. Ground, Superior, and W. T. Pinkerton, Prairie du Chien; delegates to the American Medical Association, Dr. W. T. Sarles and Dr. B. M. Caples; alternates, Drs. J. V. B. Lyman and H. V. Würdemann; councilor of the Third District, Dr. F. T. Nye, Beloit; councilor of the Fourth District, Dr. C. A. Armstrong, Boscobel; councilor of the Fifth District, Dr. G. V. Mears, Fond du Lac.

Superior was chosen as the place for holding the next annual meeting.

State Board of Examiners.

Complaint being made that the regular medical profession was not adequately represented on the State Board of Medical Examiners, a committee was appointed to investigate the matter, which presented a report, which the house adopted, as follows:

> Your committee begs leave to report that in their opinion the regular medical profession is not adequately represented on the board of medical examiners, over 2,600 regulars being licensed in the state, as against 200 Homeopaths and 100 each of Eclectics and Osteopaths. We recommend, therefore, that the Committee on Public Policy and Legislation be instructed to investigate the subject, and if thought advisable to introduce a bill seeking to remedy this defect. Inasmuch as both Homeopaths and Eclectics are now admitted on an equal footing as members of the state society, a demand that the board consist of a majority of Regulars should be insisted on.

Drs. A. W. Gray, I. G. Babcock and O. H. Foerster were elected as a Committee on Public Policy and Legislation.

A motion to consider resolutions regarding fees for life insurance examinations was laid on the table, for the reason that the American Medical Association has appointed a committee to consider the matter.

Publication of Proceedings.

The contract of last year with the *Wisconsin Medical Journal* was renewed, and Council instructed to set aside $1.20 from each member's dues for the ensuing year for subscription to this journal.

President's Address.

DR. J. R. CURRENS gave a history of the successful fight for good medical legislation in Wisconsin and showed how necessary it is for the medical man to take part in politics on account of medical legislation and the good of the people in general.

Purpura.

DR. W. H. NEILSON, Milwaukee, said that purpura is frequently of infectious origin; that the variations of purpura depend on the intensity of the infection and the condition of the blood.

DISCUSSION.

DR. G. H. FELLMAN, Milwaukee, mentioned the marked changes taking place in the blood and stated that the various forms of the disease were really manifestations of the idiosynerasy of the individual.

DR. L. SCHILLER, Milwaukee, thought it very likely that those conditions which arise *de novo* or which are autogenetic or idiopathic, as well as conditions of a rheumatic nature, are due to toxins produced by germs the nature of which we have not as yet discovered, and that other apparent symptoms are the result of this toxic condition and are not in themselves causative factors in the production of this disease.

Apoplexy, Its Diagnosis and Treatment.

DR. U. O. B. WINGATE, Milwaukee, said that vital statistics are incomplete; that more accurate returns by physicians are necessary; that diagnosis of character and location of brain lesion are necessary as a basis for intelligent treatment; chronic endarteritis is the most common cause; suspect syphilitic history in cases between 20 and 45 years of age; the differential diagnosis between hemorrhage and thrombosis and embolism is difficult. The condition of the circulation is the key to the treatment.

DISCUSSION.

DR. L. H. PELTON, Waupaca, said that it is often difficult to make a positive diagnosis in these cases, as it is, of course, impossible to make an antemortem examination. Compulsory autopsy in cases of sudden death would be desirable.

Surgical Shock.

DR. JAMES S. REEVE, Appleton, said shock is a nervous deluge; its essential features are profound prostration of the whole body and fall of blood pressure aggravated by inspissation of the blood. Pure shock is treated by stimulating remedies. There should be added in cases of hemorrhage, hypodermoclysis, and in case of pain, anesthetic remedies, the greatest of which is cocain.

Relation of Blood Pressure to Surgery.

DR. A. H. LEVINGS, Milwaukee, said that, while commendable progress has been made, the prevention and treatment of lowered blood pressure following operations and accidents are only in their infancy. It should be remembered that the lowest blood pressure compatible with life is often beneficial to the patient. Strychnin, morphin, digitalin, adrenalin chlorid and desiccated suprarenal gland are valuable adjuncts in treatment, and in loss of blood pressure due to hemorrhage hypodermoclysis is advisable.

DISCUSSION.

DR. J. R. BARNETT, Neenah, said that where there is danger of vital depression it is well to tie an extremity before anesthetization, thus storing up pure blood which can be released into the circulation, if required.

DR. RALPH ELMERGREEN, Milwaukee, stated that in our definition we should eliminate conditions due to pain, anemia of the brain, syncope, etc., which are often confused with

shock. The condition of the medulla in shock may be compared to polarization in electricity or crystallization in steel.

DR. W. E. GROUND, Superior, said that we must not class hemorrhagic conditions and resulting collapse with shock. Shock is really due to an exhaustion of the vasomotor centers from countless repeated impressions sent to them by the afferent nerves.

DR. HERMAN REINEKING, Milwaukee, said that in shock there is such an intense overpowering of the nervous system that it is absolutely unable to carry on its work. A detail of treatment to be emphasized is personal attention, not trusting too much to attendants and nurses.

DR. F. SHIMONEK, Milwaukee, deprecated the use of strychnin. Adrenalin is the drug to use in shock or in lowered blood pressure. Normal salt solution should not be used unless there is loss of blood.

Treatment of Sepsis.

DR. JOHN M. DODD, Ashland, said that serum therapy will in time be an almost certain means of curing sepsis, but until then we must simply be guided by the light of experience. If we can not attack the germ directly, we must keep the invaded body in the highest state of efficiency. I have little confidence, he said, in medical remedies for sepsis other than to keep the bodily functions properly performed. The first object of treatment is to minimize the blood poisoning and, second, to prevent destruction of tissue and abscess formation. The most appalling infection met with is that of the peritoneum.

DR. L. G. NOLTE, Milwaukee, recommended a dressing composed of a 1 per cent. solution of carbolic acid. He never had a case of dermatitis, necrosis or gangrene follow its use. Carbolic acid, moreover, has the advantages of being an analgesic and keeping the blood from the infected part.

DR. R. G. SAYLE, Milwaukee, recommended letting the infected point alone. Rubbing or palpating a focus of infection may extend the infection and is criminal massage. Rest of the infected part is of paramount importance.

A New Method for Reduction of Fractures of Lower Extremity.

DR. CHAS. H. LEMON, Milwaukee, described the remarkable results attained by the Lemon-Mueller fracture apparatus designed and built in Milwaukee. This apparatus enables the surgeon to make temporary extension, to accurately adjust fragments, and hold them rigidly in position while the plaster cast is applied. The use of this apparatus will absolutely preclude inaccurate apposition of broken parts and overriding of fragments.

Benefits of Modern Therapeutics.

DR. S. R. MOYER, Monroe, said that the judicious application of preventive medicine accomplishes more than all the painstaking efforts to heal, and this is the main trend of progress in present years. We are living in an area of great therapeutic advancement, instancing serum therapy, fresh air treatment of tuberculosis, the treatment of yellow fever, and organotherapy in general. Proprietary preparations, whether ethical or otherwise, are for the most part absolutely worthless, but the therapeutic effects of modern surgery are extraordinary.

Negligence of Profession in Securing the Establishment of Temporary Detention Quarters for the Alleged Insane.

DR. J. P. MCMAHON, Union Grove, said that the alleged insane should not be committed to jails or insane asylums until a careful diagnosis is made, but temporary detention quarters should be established. The law of Wisconsin permits the establishment of such quarters by county boards, but unfortunately is not mandatory. He recommended the appointment of a committee from the society at large to cooperate with county societies in securing necessary quarters throughout the state.

DISCUSSION.

DR. W. F. BECKER, Milwaukee, said that the chief necessity of temporary detention quarters in these cases is to keep the alleged insane out of police stations and lockups.

DR. WALTER KEMPSTER, Milwaukee, stated that the law in Wisconsin, as in many other states, is extremely crude. It is as absurd for a jury of laymen to attempt to determine a man's sanity as it would be for such a jury to attempt to determine whether he had appendicitis or not!

Endometritis.

DR. J. M. EVANS, Evansville, said that endometritis is caused either by infection or disturbed circulation. Diagnosis is usually easy, but prophylaxis is an important factor.

Diagnosis and Treatment of Injuries of the Eye.

DR. G. E. SEAMAN, Milwaukee, said that great interest attaches to all injuries of the eye on account of possible loss of vision. A complete history of the case is essential, and prompt and intelligent treatment at the outset is of great importance and is based largely on broad principles of surgery.

DR. P. H. MCGOVERN, Milwaukee, said that perforating injury in the dangerous zone from the margin of the cornea outward for at least a quarter to a third of an inch is bound to be serious and should be turned over to the specialist at once, as should all serious injuries of the eye.

Pancreatitis.

DR. JOHN H. MUSSER, Philadelphia, delivered the annual address in medicine and made a clear statement of the pathology and differential diagnosis of the disease. He said that very little reliance can be placed on the condition of the blood in attempting to differentiate between affections of the gall bladder and pancreatitis. Leucocytosis is more pronounced in acute pancreatitis than in acute inflammations of the biliary passages. The stools are white or slaty and are large in amount in pancreatic disease. The neutral fat is relatively increased, but may occur in other conditions and may not occur in pancreatitis. The presence of nuclei in the feces, determined microscopically, is characteristic of pancreatitis. Take meat fiber, sew it in a little bag, let it pass through the intestinal canal and be recovered from the stool; the meat is then examined for nuclei. In patients who have not pancreatic disease the nuclei are always digested. Excepting the nuclei test, laboratory tests are of little value because of the many qualifying circumstances that must be taken into consideration. With regard to the urine, more stress should be laid on the relative proportions of the ethereal sulphates present than anything else. It is a fair conclusion, then, that for a differential diagnosis of pancreatic affections we must still rely on close clinical observation and a careful study of the history of each case, availing ourselves of the aid (slight as it is) obtained from laboratory findings.

Pneumonia.

DR. JULIUS NOER, Stoughton, said that pneumonia is a symptom of an acute infectious disease whose clinical phenomena and pathologic findings are usually quite characteristic. It is probably due to mixed infection or toxemia. Old views are confusing and misleading. Treatment should be symptomatic, not specific.

DISCUSSION.

DR. W. H. WASHBURN, Milwaukee, considers pneumonia a general infection. The disease is not caused by the same germ in every case; therefore, antitoxic sera are disappointing. Alcoholic stimulants are not desirable, but actual cardiac stimulants, such as strychnin, are indicated. In cases of delirium we need not hesitate to use a hypodermic of morphin.

DR. W. H. NEILSON, Milwaukee, thought we should have something hard and fast to tie to. He has had good success in the use of full doses of digitalis followed by acetate or citrate of potassium, begun as soon as the presence of the disease is suspected.

Tuberculosis Sanatoria.

DR. C. A. HARPER, Madison, said that state sanatoria should adhere close to the rule to admit only patients suffering from incipient tuberculosis, and should return to their homes 50 to

75 per cent. of the patients cured or on the road to recovery. Advanced cases should be treated in consumptive hospitals. As tuberculosis is essentially a house disease, the house should be eliminated as a factor in the treatment of tubercular patients. The crusade of education can not be checked until the greatest foe of mankind is defeated at every point.

DISCUSSION.

DR. F. F. BOWMAN, Madison, considered state sanatoria of prime importance in aiding the medical profession in methods of treatment and in instructing the laity, for example. The medical world is a unit on the question and on the methods of fighting this disease.

DR. C. H. STODDARD, Milwaukee, described the tuberculosis movement in Wisconsin and asked for the assistance of the State Medical Society as a body in stimulating the movement and that each member assist in the formation of local anti-tuberculosis leagues.

DR. G. E. SEAMAN, Milwaukee, mentioned the state institution to be provided at Wales. The medical profession, he said, must lead and bear the burden of the contest. A tuberculosis league will be formed under the sanction and approbation of the State Society.

Pursuant to a motion made by Dr. Stoddard, a committee, consisting of Drs. C. A. Harper, C. H. Stoddard, G. E. Seaman, John M. Beffel and C. E. Coon, was appointed to consider the question of the formation of a tuberculosis league, to report later.

DR. W. C. F. WITTE, Milwaukee, discussed the surgical aspect of the disease, and stated that cases due to traumatism, misplaced abdominal organs, disease extending from neighboring organs, especially the appendix, gall bladder and pelvis, are surgical.

Nervous and Mental Diseases in General Practice.

DR. RICHARD DEWEY, Wauwatosa, said the lack of instruction in these diseases in medical colleges is lamentable. There is a tendency on the part of the general practitioner to adopt inappropriate measures of treatment in psychopathic cases, using sedatives and narcotics too freely; sending patients away for travel who are in no condition to benefit by this measure; advising patients that there is nothing the matter with them, or that it is all "imagination;" also that the disagreeable symptoms will soon "wear off," and no special treatment is necessary. The writer dwelt on the powerful influence of the mind over the body, both for good and ill, and the necessity for reckoning with this agency in measures taken.

DISCUSSION.

DR. W. F. BECKER, Milwaukee, believes that mild cases of neurasthenia and melancholia are better treated in private practice than in institutions, and in such cases bed treatment is often the best. Cerebral palsies in children, if treated by the neurologist and the orthopedist in conjunction, frequently show excellent results. Because a person is insane is no reason why, *ipso facto*, he should be sent to an insane asylum or sanitarium. Paranoiac patients are often a source of absolute danger to the neurologist.

Static Disorders of the Feet.

DR. H. E. DEARHOLT, Milwaukee, discussed all possible errors in weight bearing not primarily due to congenital or acquired faulty structure. Modern civilization is to blame for these conditions. The regulations of the army and various gymnastic regulations are entirely wrong in the position demanded of the feet in activity. Misguided directions are given children to turn their toes outward in standing and walking, and feet that would have grown into strong active members become disposed to future disorder. The treatment of static foot disorders is as specific as the treatment of syphilis or malaria. We are given a definite mechanical disorder which is to be met only by the rational application of mechanical measures. The result of ideal treatment is the complete restoration of the foot structurally and functionally; foot gymnastics are important; massage is of value; supplies and rests may be useful.

Surgery of the Nasopharyngeal Structures.

DR. M. IVERSEN, Stoughton, said that cutting operations are of great importance in securing free ventilation of the nose and pharynx. It is advisable to seal the cut tissues with trichloracetic acid albumin film. Free ventilation is of service for the relief of chronic deafness of a catarrhal nature if the structures are not degenerated or atrophied.

DISCUSSION.

DR. H. V. WÜRDEMANN, Milwaukee, advised complete removal of adenoids and of faucial tonsils if the obstruction affects the general health, but to save as much of the turbinal body as possible when turbinotomy is done.

DR. HERMAN STOLTE, Milwaukee, finds that the restoration of the normal air passage by removal of adenoids, etc., effects a lasting cure in children. The operation of turbinectomy is greatly abused. Save as much of the turbinated bodies as possible.

DR. G. E. SEAMAN, Milwaukee, warned against the use of the Carmal-Jones spoke-shave, which has been abandoned even by its inventor.

Obstetric Responsibility During Gestation.

DR. W. F. MCCABE, Beloit, said that the attending physician should give ample time to each case and should be well paid for doing so. He advised that examination of the urine should be made frequently.

DR. JULIUS NOER, Stoughton, said that, confinement being a physiologic process, the laity fail to see the great importance of careful medical attention. Attention to metabolism is especially important. Lying-in hospitals are far preferable to homes for these cases.

DR. H. SYLVESTER, Milwaukee, urged to keep pregnant women in pleasant surroundings, largely in the open air. Women themselves are the objecting factor to lying-in hospitals.

Medical Aspects of Exophthalmic Goiter.

DR. W. H. WASHBURN, Milwaukee, said that the clinical features of exophthalmic goiter are not due to the same anatomic lesions in all cases, and in some no lesions other than hypertrophy of the thyroid can be found, and this hypertrophy of the thyroid is to be regarded as a consequence of the disease rather than as being the disease itself. We have no present means of determining in a given case what, if any, anatomic lesions exist. From these facts it follows that treatment in each case must be tentative. Many cases recover permanently and these are most likely of toxemic origin. Where sympathetic nerve or parathyroid lesions exist, surgery doubtless holds out the only hope of relief.

Surgical Treatment of Goiter.

DR. H. A. SIFTON, Milwaukee, said that the etiology, pathology and treatment of goiter are far from being settled. Of all surgical procedures thyroidectomy has afforded most relief in goiter. The administration of the anesthetic is an important question and may be fraught with danger; but he has never seen a case which demanded a local anesthetic where general anesthesia was contraindicated. Cocain should not be used; ether is just as safe. Thyroidism is an unfortunate postoperative complication. Good results from medicinal treatment can be expected in the hypertrophies only. When such treatment fails, surgery should be resorted to. All asymmetrical enlargements of the thyroid in persons over 30 should be removed. If thyroidectomy is done early the best results are achieved.

Basal Principles of Oral, Nasal and Facial Deformities.

DR. GEORGE V. I. BROWN, Milwaukee, presented considerations of prenatal and postnatal conditions that have an influence in the development of deformities. Stereopticon views were shown of sections of human embryo heads and pictures of faces of infants, children and adults, showing nasal or oral defects of varying degrees before and after operative correction.

Clinical Aspect of Stomach Surgery.

DR. A. J. OCHSNER, Chicago, delivered the annual address in surgery. He gave a review of the anatomy of the stomach. In this portion of the body as well as in every other, there is a natural tendency to repair. A diseased stomach which has recovered without surgical interference is very much better than a stomach which has been operated on. Hygienic measures are of the highest importance. If normal conditions can be otherwise restored, do not operate. From a surgical point of view, aside from malignant disease, we have most frequently to deal with obstruction. Dr. Ochsner reviewed the various forms of obstruction and indications for operation, viz.: (a) Extreme dilatation with decomposition of residual stomach contents; (b) starvation; (c) threatened perforation; (d) adhesions increasing obstruction; (e) incipient carcinoma. X-ray, blood and urinary examinations are of but slight diagnostic importance; but in carcinoma and ulcer blood will be found in the feces. It is easy to differentiate between gallstones and stomach disease. Duodenal ulcer can also be readily distingnished. We must look on the stomach as a machine, and must try to restore that machine to as nearly normal working condition as possible.

Tuberculosis League.

The Committee on the Organization of a State Tuberculosis League reported in favor of the organization of such league and recommended that a committee be appointed, to consist of one member of this society from each councilor district, to further the work in the several districts, and that also a special committee of five be appointed for the incorporation of a state association for the study and prevention of tuberculosis. This report was adopted.

AMERICAL SURGICAL ASSOCIATION.

Annual Meeting, held at Cleveland, Ohio, May 30-June 1, 1906.

(Concluded from page 67.)

Hyperplastic Tuberculosis of the Intestines and Peritoneum.

DR. CHARLES B. NANCREDE, Ann Arbor, Mich., said that treatment resolves itself into excision of the affected portion of the bowel. Doubtless fresh air, sunshine, tonics and the ordinary measures addressed to the treatment of tuberculosis located elsewhere may serve as roborants and increase the peritoneal tissue resistance, as well as that of other parts, but no direct benefit can be expected, as is the case in certain instances of ordinary tubercular peritonitis. He reported one case.

Review of 1,500 Operations on the Gall Bladder and Bile Passages.

DR. WILLIAM J. MAYO, Rochester, Minn., said the mortality in 1,500 operations was 4.4 per cent. In the last series of 500 cases it was 3.2 per cent. Every patient dying in the hospital, without regard to time or cause of death, is counted as an operative mortality. Of operations for uncomplicated gallstone disease, the mortality, one-third of 1 per cent., was due to accidental causes. Complications the result of delay caused more than nine-tenths of the death rate; 95 per cent. of all complications occur in patients who have had marked evidences of gallstone disease and ample period of good health for safe operation. Of 845 cholecystostomies, the mortality was 2.13 per cent. In the last series of 500 cases it was 1.47 per cent. Of 319 cholecystectomies, the mortality was 3.13 per cent. In the last series of 500 it was 1.62 per cent. The operation is indicated in all cases in which the gallbladder has lost its function, especially in cystic duct obstructions and for malignant disease. It is a slightly more serious operation than cholecystectomy, but has a growing field of usefulness in all cases in which the gallbladder is involved.

Common duct operations, 207 cases. Group 1, consisting of those cases having gallstones in the common duct, operated during the quiescent period; jaundice and infection moderate; 105 cases; 3 deaths; 2.9 per cent. Group 2, 61 cases; 10 deaths; 16 per cent; in which there was active infection, involving the ducts of the liver, and jaundice; patients suffered from Charcot's fever (fever and ague type); obstruction was severe, but not continuously complete. Group 3, 29 cases; 10 deaths; 34 per cent.; complete obstruction of common duct, in which no bile passes into the intestinal canal; elimination taking place by means of the kidneys and skin. Group 4, malignant disease; 12 cases; 4 deaths; 33 1-3 per cent.; gallstones present in nearly all. Panereas involved in 86 of the 1,500 cases; 4 acute, with 2 deaths; 6 subacute, with 1 death; 9 cancer, with 5 deaths; 67 chronic, without marked effect on the mortality.

Serumtherapy of Tetanus.

DR. C. A. PORTER, Boston, Mass., recommended the following: (1) Immediate intravenous and subcutaneous injections to neutralize the circulating toxin. (2) Immunizing or neutralizing injections at the highest level which the severity of the symptoms appears to justify; directly into the cord, as advocated by Rogers, or into the higher motor nerves, such as the hypoglossal and spinal accessory. (3) Peripheral intraneural injections as near to the cord as possible; where amputation is indicated or allowed there is positive experimental evidence that nerve section will isolate the toxins in the limb. (4) Lymphatic absorption will be diminished by the application of Bier's principle of passive hyperemia, or by circumcision of the limb. (5) Parenchymatous injections, especially into the muscles, may be of distinct value in addition to subcutaneous and intravenous injections. (6) If possible, the local focus should be thoroughly eradicated. (7) We have no right to neglect symptomatic treatment. (8) When once the disease has progressed beyond a certain stage, animal experimentation gives no ground for hope that any treatment whatever can be successful.

Treatment of Tetanus by Magnesium Sulphate.

DR. JOSEPH A. BLAKE, New York, said that from his experience in human tetanus intraspinal injections relieve spasm, so it must be inferred that they produce a block of nerve impulses by direct action on the nerve trunks. So far its employment in human tetanus has not been attended by uniform results. This may be due to different degrees of susceptibility on the part of the patient, and partly by variation in technic or lack of experience in the use of magnesium sulphate on the part of the medical attendant. So far as he could ascertain, only four cases of tetanus have been treated with magnesium sulphate. Of this number only one recovered, and this was his own case. His case was one of acute tetanus in a boy of 15. The injections controlled the convulsions in this patient for periods varying from twenty-nine to thirty-seven hours each. His impression of this drug is that it is reasonably safe and offers a means of modifying the convulsions and relieving pain in a way no other drug has approached. For those reasons alone it is worthy of a more extended trial.

Present Status of Serotherapy of Surgical Affections.

DR. CHARLES A. POWERS, Denver, stated that while there are a vast number of contributions to this subject, very few of them bear the test of rigorous analysis. The majority consist of scattered cases of recovery from sepsis, a serum having been employed. Scientific details are lacking. Scientific requirements should be fulfilled as far as possible. It should be shown in individual cases that a correct diagnosis has been made and that the infection is a pure one. The mere fact that a patient recovers is not sufficient for a demonstration. Given the special symptoms produced by a certain germ, it should be shown that the serum, shortly after its administration, favorably modified these symptoms so far as the latter could have been due directly to the specific toxemia or bacterio-toxemia of the disease. But few articles reach this standard, and analysis of these shows that at present serotherapy is valueless in sepsis other than that due to tetanus. Antistreptococcic serum has failed to gain a place in surgery. The serotherapy of tetanus has a place, but its exact value is as yet unknown. It seems probable that while it fails to cure severe and advanced cases it has effect in early and mild cases. As a prophylactic measure it seems to have achieved a standing, yet many fatal cases develop, despite its early use. Further, it is never possible without bacteriologic proof to say that tetanus would have developed in the cases in which serum is used as a prophylactic.

Traumatic Gastric and Duodenal Ulcer Due to Trauma.

DR. A. F. JONAS, Omaha, said the progress of cases of extensive contusions that occur after severe blows to the stomach and intestines is rapid; death occurs early unless prompt surgical aid is brought to bear. It is difficult to judge correctly in cases where the injury has produced a contusion or laceration of a part of the gastric parietes, as, for instance, mucosa, or where a hematoma has developed between the coats of the gastric wall, i. e., between the mucosa and muscularis.

Treatment of Gastric and Duodenal Ulcers and Benign Obstructions of Pylorus.

DR. ARCHIBALD MACLAREN, St. Paul, Minn., said the question how we may distinguish between medical and surgical gastric ulcer is of the greatest importance to the medical world to-day. It is known that some ulcers cure themselves and that many give no symptoms. He agrees with Shattuck that there are only two conditions in gastric ulcer which demand operation: (1) Perforation; (2) obstruction. In perforation due to an acute ulcer, if the opening can be closed, the wound sponged or irrigated, a large-sized suprapubic drain put in soon after operation, a large percentage will recover with the aid of Fowler's position. In obstruction cases the condition is mechanical and demands mechanical relief. One other class should be added to this list, i. e., relapsing gastric ulcer; the ordinary medical treatment is useless in these cases; proper medical treatment is putting the patient to bed, taking away all food by mouth for some days, supplying water and nourishment by rectum. Gastroenterostomy is the most popular; posterior no-loop operation, last described by Mayo, is the best operation. The anterior long-loop operation is followed by a relapse, due to dragging of loop on the anterior suture line, producing contraction of the opening. The Roux is not necessary, and is more dangerous because of the two intestinal openings and two lines of suture.

Early Operations for Cerebral Hemorrhages of Childhood.

DR. CHARLES H. FRAZIER, Philadelphia, said that in order to put on a rational basis the surgical treatment of epilepsy greater discrimination must be made in the selection of cases. No opportunity should be lost in operations on epileptic subjects to observe as closely as possible the existing pathologic conditions. A more intimate knowledge of the pathology of the disease is necessary for the establishment of a basis on which to determine the propriety of operative intervention and the character of the same. Epilepsy develops sooner or later in from 30 to 50 per cent. of cases of infantile hemiplegia. In many of these the lesion has been proven by autopsies to have been a hemorrhage, and in children the hemorrhage is often either on or near the cortex rather than intracerebral, as in adults. The tendency toward secondary degenerative changes, such as atrophy and softening, the greater disposition in epileptic subjects toward mental defects, especially idiocy, and the otherwise hopeless nature of the disease constitute the principal arguments for surgical intervention.

Pulsating Exophthalmos; Ligature of Common Carotid, External Carotid and Superior Thyroid Arteries.

DR. JOSEPH RANSOHOFF, Cincinnati, presented a case of this nature. The patient was 21 years of age, and after an injury to the temple had paralysis of the outer rectus and a pulsating exophthalmos. The pulsating exophthalmos did not come on until about four weeks after the injury was sustained. It is not known how long the paralysis of the abducens had continued. There was intense chemosis of the ocular conjunctiva; which threatened to produce ulceration of the cornea. There was no pain, but great pain produced by the ringing and buzzing noises in the head. The case was treated by tying the common carotid, external carotid and superior thyroid arteries. This extensive operation was done through one incision and was made in order to prevent, as far as possible, the establishment of an anastomotic circulation too early. Three months after the operation the patient continued well, without return of pulse in the facial or temporal artery. The abducens paralysis persisted.

The essayist collected twenty-one recent cases, in which the tying of the common carotid artery resulted in fourteen cures. In five the cures were partial or there was a recurrence. Death followed the operation in only one instance.

The following papers were also read: "Surgical Treatment of Epispadia and Ectopy of the Bladder," by Dr. F. Trendelenburg of Leipzig, Germany; "Inflammations About and Displacements of the Sigmoid," by Dr. Arthur T. Cabot of Boston; "Technic of Ablation of Hemorrhoids," by Dr. Lewis S. Pilcher of Brooklyn, N. Y.; "Radical Cure of Femoral Hernia," by Dr. William B. Coley of New York; "Aspiration of the Thorax in Alleviation and Cure of Empyemic Cavity," by Dr. Joseph D. Bryant of New York; "Excision of the Scapula for Malignant New Growths," by Dr. Frank J. Lutz of St. Louis, Mo.; "Histological Basis and Limitations of Surgery of the Spinal Cord Based on Experiments, Clinical Experience and Histological Research," by Dr. J. B. Murphy of Chicago; "Tetanus and Its Serum-Therapy," by Dr. Nathan Jacobson of Syracuse and Dr. Henry D. Pease of Albany; "Medico-Military Notes in Manchuria," by Dr. J. Van R. Hoff, U. S. A.

Officers Elected.

The following officers were elected: President, Dr. Dudley P. Allen, of Cleveland, Ohio; vice-presidents, Dr. Thomas W. Huntington, of San Francisco, Cal., and Dr. A. F. Jonas, of Omaha, Neb.; secretary, Dr. Robert G. Le Conte, of Philadelphia, Pa.; recorder, Dr. Richard H. Harte, of Philadelphia; treasurer, Dr. Charles A. Powers, of Denver, Colo.

Place of next meeting, Washington, D. C., in conjunction with the Congress of Physicians and Surgeons, 1907.

AMERICAN PHARMACEUTICAL ASSOCIATION.

PHILADELPHIA BRANCH.

Meeting held May 28, 1906.

Prof. HENRY KRAEMER in the Chair.

Limitations to Self-Medication.

DR. THOMAS R. NEILSON stated that the question of the right of an individual, not a physician, to prescribe for himself touched largely on the question of individual freedom, but that it must be governed by common sense and the public welfare. He believes the greatest question to be one of diagnosis, and that good would often result if the patient knew what he was treating himself for. He considered the subject under (a) asking for and receiving the drug one's self, and (b) telling the apothecary, "I have such and such a thing; what is good for it?" The latter he termed as strictly counter-prescribing, and the individual often suffers seriously because of the erroneous idea of his condition. He referred particularly to cases of infected wounds, venereal disease and even appendicitis, in which individuals have been treated in this manner. He referred at length to the treatment of gonorrhea, etc., by this method, and stated that these diseases are often considered by the patient as trivial, which, together with his desire to keep the matter secret, causes him to seek the druggist. He emphasized the necessity for proper treatment in order to prevent the more serious results, not only for the person suffering, but for future generations as well.

DR. W. M. L. COPLIN considered the subject of counter-prescribing by (1) those individuals who failed to pass the state examination or failed to register; (2) individuals who passed the state examination, but failed to register; (3) prescription druggists. He considered these conditions as constituting (a) a fraud on the individual, and (b) a detriment to the public health, and referred as an instance of this fraud to certain shoes with electric soles, etc., which had been sold in New York at fabulous prices. He then took up the question of communicable diseases generally, and on their treatment, either by men not competent to make a diagnosis or by counter-prescribing. He reported three cases illustrative of the danger of contagious diseases treated in this manner. He referred to the danger of allowing cases of specific disease to remain untreated or of treating them either by self-medication or by counter prescription, as both this condition and the secondary complications, if allowed to remain unattended to, will develop more serious conditions. He also called attention to the fact that many of the disinfectants are not of a proper strength and character, and stated that not only should the disinfectants be properly selected, but they should be applied by a man competent and willing to do the work.

DR. H. C. WOOD, JR., felt that it is, perhaps, justifiable for the druggist to prescribe for some slight ailment, such as constipation, slight sore throat, etc., where the diagnosis is known

or readily established, but not where there is any doubt as to the diagnosis, and that such methods should be avoided in the more serious conditions or where the diagnosis is not easily established.

DR. CHARLES H. LAWALL referred to a disinfectant which has recently come under his observation, which consists of 99 per cent. of sodium chlorid and 1 per cent. of sodium permanganate, the directions given with it being that it be applied a teaspoonful to a bucket of water. He stated that the forms of counter-prescribing directly affecting the health of the community were (1) counter-prescribing, (2) dispensing of drugs used for improper purposes. He called attention to the practice of some druggists to prescribe set prescriptions and prescriptions found in books, and expressed the opinion that it was beyond the scope of a druggist's field to assume the responsibility of diagnosis and prescription. He referred particularly to the treatment of eruptive symptoms, which were frequently treated as of local origin when they were really of a constitutional character and should have been so treated, while the treatment given had a deleterious effect on the health of the patient. He referred to the work of the Council on Chemistry and Pharmacy of the American Medical Association, and urged that the pharmacists work in conjunction with this council, which he believed would tend toward establishing a more friendly feeling between the two professions.

MR. FRANKLIN M. APPLE felt that it is the best policy when a patient applies for treatment for some simple condition to give a simple remedy therefor under a known name: for instance, in cases of sore throat, chlorid of potash, at the same time telling him if he did not get relief he should consult a regular physician.

MR. JOSIAH C. PEACOCK urged the importance of the publicity of papers read at these meetings and the necessity of impressing on the public the need for consulting regular physicians in order to get proper treatment. This would do much toward establishing a more friendly relation between the two professions.

PROF. HENRY KRAEMER felt that the public wanted counter-prescribing in many instances, just as they wanted "patent medicines," and believes that the publicity urged by the last speaker would be one of the most important means of eradicating this evil.

MR. JOHN D. BERRY referred to the fact that the druggists are not always at fault, and that sometimes the prescriptions are not written plainly, referring to a case in which a physician wrote a prescription for calomel pills, A. B. C. pills.

DR. WILLIAM D. ROBINSON stated that if there is anything the druggist must of necessity know it is to be thoroughly conversant with the language of pharmacy. He directed particular attention to the evil of counter-prescribing, both from its effect on the health of the patient and the legal responsibility which is assumed by the druggist.

DR. WILLIAM E. ROBERTSON urged the necessity for greater publicity and the education of the public to the fact that they would necessarily receive better treatment at the hands of the physician who had spent years in the practice of medicine than at the hands of the druggists. He also urged the necessity for the physician to keep himself thoroughly advanced, instead of falling into careless and slipshod habits, and stated that when the physician realizes that he owes at least a moral responsibility to the patient he would then command more the respect of the patient. Some of the blame for counter-prescribing should be placed on the physician as well as on the pharmacist.

MR. M. I. WILBERT called particular attention to the necessity for careful and continued treatment in genitourinary cases and also in communicable diseases, which he believes should be in the hands of competent men, and that the public should be educated and that no better means for accomplishing this education exists than through the daily papers.

MR. AMBROSE HUNSBERGER felt that the pharmacist is not alone to blame for the evil of counter-prescribing, feeling that they are forced to do a certain amount of it, particularly in some neighborhoods, by the physicians who own drug stores and give advice free and charge only for the medicine. He also cited the abuse of the free dispensaries as a fertile factor in producing this result.

Therapeutics

Spasm of the Pylorus.

After outlining the important symptoms which may arise as the result of spasm of the pylorus, Graham Chambers, in the *Dominion Medical Monthly*, states that in the treatment of the disease, whether primary or secondary, a general course should pertain both to the etiology and to the symptomatology. In primary spasm the nervous system should receive special attention, and every measure taken to allay excessive irritability and to improve the general tone and strength of the patient. To meet these conditions the author recommends the bromid of sodium and strontium, and if anemia be present, iron and phosphates are indicated. The diet, however, is the most important thing to consider. The food should be very soothing, easily evacuated, sufficient to support nutrition, and not too great a quantity should be taken at one time. In relieving the spasm the best medicinal preparations are the bromids, chloral hydrate, extract of belladonna, cannabis indica and codein. These preparations may be administered either by the mouth or by the bowel. Codein phosphate may be given hypodermically. In the treatment of secondary spasm of the pylorus similar measures should be taken as in the treatment of the primary form which tends to relieve the stagnation of food. However, the primary factors must always be taken into consideration, such, for instance, as gastric ulcer, which, when situated near the outlet of the stomach, usually produces severe pain and a consequent spasm of the pylorus, and in many instances the only way to prevent such spasm is to give complete functional rest to the stomach for a considerable length of time.

The Value of Drugs in Therapeutics.

Dr. F. C. Shattuck, writing on this subject in the *New England Medical Monthly*, states that in a great many instances drugs are mainly adjuvants only and that they serve merely to alleviate untoward symptoms, such as insomnia and pain, which tend to retard or to prevent recovery. He mentions this as being true, especially in such diseases as typhoid, pneumonia, the exanthemata and tuberculosis. In many cases of acute infection drugs are not used at all, or if they are used it is merely for symptomatic purposes. In many other cases drugs are indispensable in the treatment of disease, such, for instance, as myocardial disease. In this connection he mentions the invaluable aid which digitalis affords in such cases, while in some instances it has been curative and could not be dispensed with in the treatment of the malady. He mentions other minor ills which experienced physicians can greatly modify by drugs. For illustration he mentions the condition of so-called biliousness, more generally termed autointoxication, which can be so readily corrected by means of calomel. The bromids seem to allay reflex irritability, and often are of value in certain forms of dyspepsia, palpitation of the heart, and genital disturbances, in so far as these disturbances are mainly due to faulty innervation based on nothing worse than functional disorder. The bromids are of value also as hypnotics in aiding Nature by securing a proper amount of sleep, keeping in mind, however, the danger of too constant use of such remedies.

The leading therapeutic principles, according to Shattuck, are to be summed up as follows: 1, Do no harm; 2, try to see as clearly as possible just why a drug should be given, the purpose of giving it, whether as a specific, curative, palliative, or as a placebo; 3, so far as possible, give one drug alone, that is, uncombined with other preparations; this general rule, of course, is subject to many exceptions; 4, in using an efficient preparation, be as sure as possible that a good preparation is employed, and then give it until something happens—either the desired effect or evidence appears that the limit of toleration has been reached—what is called the physiologic, but what he should prefer to call the toxic effect. As an example, Shattuck mentions nitroglycerin as a preparation which should not be thrown aside as useless until the dose has been pushed to the point of producing headache or flushing of the face without relief. In syphilis he is of the opinion that the dose of potassium iodid should be rapidly pushed, once in a while even

to three ounces a day. From one to four drams of this preparation three times a day are not infrequently necessary to make any impression on the disease. Shattuck's suggestions are very timely in that there is always danger of going to the extreme of therapeutic nihilism, as he states it, and of disregarding the individual; and while our knowledge is imperfect as to the exact action of many preparations, the suffering patient demands all that the imperfect knowledge will allow.

Eczema.

In the treatment of eczema Prof. Allen Jamieson, in the *Edinburgh Medical Journal*, emphasizes the following important points: First, cleanse the part; second, soothe the surfaces; third, stimulate very cautiously. He states that these principles of treatment can be safely followed out in all types and stages of the disease. He mentions the conditions of eczema of the legs with oozing and crusting where a cold starch poultice applied to the affected parts is of service in loosening the adherent crusts and cleansing the epidermis. After this application an ointment composed of the following combination is recommended:

R. Emplastri plumbi		
Adipis, āā	℥ii	8

M. Fiat unguentum. Sig.: Apply locally.

After using the foregoing ointment for some days, the following ointment may be substituted with advantage:

R. Hydrargyri ammoniati		
Hydrargyri bisulphid, āā	gr. x	65
Sulphuris precipitat	ʒss	2
Camphoræ	gr. iv	25
Adipis, q. s. ad	ʒi	30

M. Fiat unguentum. Sig.: Apply locally.

When there is eczema of the scalp, a good lathering with warm fluid potash soap is advised, followed by an ointment similar to the following:

R. Acidi salicylici	gr. x	65
Sulphuris precipitat	gr. xv	1
Camphoræ	gr. iv	25
Adipis, q. s. ad	ʒi	30

M. Fiat unguentum. Sig.: Apply locally.

As a substitute for the foregoing the following combination is sometimes very efficacious:

R. Resorcini	gr. x	65
Adipis, q. s. ad	ʒi	30

M. Fiat unguentum. Sig.: Apply locally.

He makes strong mention of the fact that the official unguentum zinci is too often imposed on and prescribed when not indicated. It is by no means a panacea for all cutaneous affections, and the slight amount of benzoic acid in the lard often proves irritating and is very liable to become rancid in spite of the small amount of antiseptic present. The following combination, however, is sometimes of value:

R. Zinci oxidi	gr. v	30
Ceri albi		
Adipis, āā	ʒss	2

M. Fiat unguentum. Sig.: Apply locally. Or:

R. Zinci oxidi	gr. xx	1 30
Olei amygdalæ		
Aquæ, āā	ʒss	15

M. Sig.: Apply locally.

Acute Gastritis in Infancy.

In the treatment of acute gastritis of childhood Cotton, in his text-book on "Diseases of Children," states that the withholding of food and drink from the stomach is of the first importance. In infants and tractable older children the stomach should be washed out with the following solution:

R. Sodii bicarb	gr. xxx	2
Aquæ steril	Oii	1000

M. Sig.: As a solution for performing lavage.

No treatment for the temperature is required as a rule, except sponging occasionally at a temperature agreeable to the patient. In older children he recommends that an ice bag be placed over the epigastrium to lessen the pain and to diminish the frequency of the vomiting. Constipation, if present, should be corrected by means of a soap and water enema. He advises frequent small doses of calomel, combined as follows, to clear out the intestinal tract:

R. Hydrargyri chloridi mitis	gr. 1/20	003
Pulv. ipecacuanhæ	gr. 1/50	001
Sodii bicarb.	gr. ss	03
Bismuthi subnit.	gr. i	06
Olei anisi	m. 1/20	003

M. Fiat chart. No. i. Sig.: One such powder every half-hour until a thorough evacuation has been obtained.

The foregoing may be continued for ten or twelve doses and then given once every two hours. If the vomiting persists bismuth subnitrate may be given in from 2 to 10 grain doses, added to the foregoing combination. The thirst may be relieved by small, high enemas of normal saline solution three or four times a day. Small bits of ice may be swallowed. Food should be withheld for forty-eight hours. If the vomiting still continues, nourishment must be given by the bowel. If the symptoms are so severe as to require stimulation the author recommends small doses of brandy or aromatic spirits of ammonia diluted with iced water. Strychnin hypodermically may be required in the severer cases, and as the gastric symptoms subside the tincture of nux vomica may be substituted for the strychnin. The nux vomica should be given well diluted, three or four times a day. When beginning on foods only the bland ones should be given at first, such as barley water, albumin water, whey and strained gruels, in small quantities at intervals of from two to four hours. The food, however, must be withdrawn if vomiting reappears. The return to the usual diet must be very gradual, as such errors cause an unnecessary continuance of the trouble.

Medicolegal

"Bad Result" and Second Operation in Malpractice Case.

The Supreme Court of Washington says that immediately after the plaintiff in the malpractice case of Peterson vs. Wells and another sustained a fracture of both bones of the left leg, at or near the ankle, he was removed to a hospital conducted by the defendants for treatment. The accident occurred at about 11 a. m., and at about 4 p. m. the defendants set the bones and placed the leg in a plaster cast extending from the knee down over the foot. The leg remained in this cast for about four weeks, and the plaintiff remained at the hospital for about two weeks after the cast was removed. According to his testimony and that of his witnesses, when the plaster cast was removed the leg was crooked, curving in at the ankle, so that he walked on the inside of the ball of the foot and heel and was very lame. Some three or four months after the injury he went to another city and consulted a physician, who was a witness in his behalf at the trial, and who made a somewhat cursory examination of the leg, advising him, on account of his being without means, to go to the county physician. But instead of doing that he went to a hospital there, where the bones were rebroken and reset, the condition of the leg being materially improved by this second operation. At the close of his case he was non-suited, and he appealed. He contended that he had made out a prima facie case of negligence or want of skill on the part of the defendants, and that he was entitled to have his case submitted to the jury. The defendants, on the other hand, contended that he had proved nothing more than a "bad result," and that this of itself is no evidence of want of care or skill in actions of this kind. The Supreme Court takes the plaintiff's view. It says that a surgeon does not undertake to effect a cure or restore a broken limb to its normal condition. If he treats the injury with a reasonable degree of skill and care he is not responsible for the results. The testimony in this case, as to the nature of the fractures, was very general, and if nothing further was shown than the "bad result," as contended by the defendants, the judgment below was doubtless right; but this court can not agree with the defendants that nothing beyond a bad or unfavorable result was shown. It was further proved that a second operation was performed in which the bones were rebroken and reset, and that the second operation resulted in a very considerable improvement in the condition of the leg. This of itself was some evidence of negligence or want of skill in the first treatment and would

probably carry the case to the jury without more. In addition to this, however, the physician who examined the leg after the first treatment and before the second testified that the results indicated that the leg had not been treated with ordinary skill; and after a searching cross-examination of the plaintiff nothing was adduced tending to show that any act of his contributed in any way to the unfavorable results produced by the defendants' treatment. Wherefore, the Supreme Court is clearly of the opinion that a prima facie case of want of diligence or skill was made out.

Women Entitled to Be Examined by Women Physicians.

The Fourth Appellate Division of the Supreme Court of New York says, in the personal injury case of Potter vs. Village of Hammondsport, that it thinks the provisions of Section 873 of the Code of Civil Procedure of that state, which provides for the physical examination of a plaintiff at the instance of the adverse party, entitles a female to have the examination by physicians of her own sex, and that the phrase, "before physicians or surgeons of her own sex," means that the examination shall be made by them, and not merely in their presence. The court can not assent to the view that it was ever intended that a woman should be compelled to expose her person to a physical examination by physicians and surgeons not of her own sex or selection. The information so acquired by the examining physician is not gained under the ban of secrecy, for she does not stand in the confidential relation of patient to the examining physician. Judge O'Brien, in the case of Lyon vs. Manhattan R. Co., 142 N. Y., 298, quotes from the opinion of Mr. Justice Gray delivered in the Supreme Court of the United States in the case of Union Pacific Ry. Co. vs. Botsford, 141 U. S., 250, the following: "The inviolability of the person is as much invaded by a compulsory stripping and exposure as by a blow. To compel any one, especially a woman, to lay bare the body, or to submit it to the touch of a stranger, without lawful authority, is an indignity, an assault, and a trespass." The court is not called on to give a construction of this provision so literal as to permit this to be done. While Section 873 of the Code of Civil Procedure has changed this rule of the common law, this change should not be extended beyond a fair and reasonable interpretation of the statute which makes this innovation. Where a woman is compelled to submit to a physical examination under the provisions of this section, the court thinks she has the right to require such examination to be made by physicians of her own sex. This view to the court seems reasonable, and does no violence to the language of the statute. Two members of the court, however, dissent, insisting that the plaintiff was entitled merely to have the examination before, not by, physicians or surgeons of her own sex. They say that, while the county judge had a discretion as to the persons to be appointed, he should have treated the defendant fairly, and not put it at a disadvantage. It seems to them that the defendant should be permitted to have its own physicians or surgeons, the persons it would rely on to aid it in the trial, make the examination; providing they are reputable and not personally objectionable to the plaintiff.

Relation Between Company's Physician and Patient.

The Supreme Court of Utah says, in the personal injury case of Viallet vs. Consolidated Railway and Power Co., that the evidence tended to show that soon after the plaintiff was hurt, by a collision of cars, and while in an unconscious condition, and while he was being treated for his injuries by another physician, he was taken in charge by the defendant's physician, who set and bandaged his shoulder, and thereafter made regular visits to his home, and waited on him there, ostensibly for the purpose of giving him medical treatment, but the main and principal object being to procure as favorable settlement for his company as he could induce the plaintiff to make. When, however, the defendant's physician took charge of the plaintiff at the drug store soon after the accident occurred which caused his injuries, set and bandaged his shoulder, and otherwise treated his injuries in a professional capacity, the confidential relation of physician and patient was created, and continued to exist. The law is well settled that from the time the relation of physician and patient is created until it ceases to exist the physician is not only legally bound to act in the utmost good faith in his treatment of his patient professionally, but he is inhibited from taking advantage of the confidence growing out of this relation, reposed in him by his patient, and, by misrepresentations, or other unfair means, or by the exercise of undue influence, induce his patient to convey, transfer, or otherwise dispose of, to such physician, or to other parties whom the physician may represent in other capacities, valuable property rights for a wholly inadequate consideration, as appeared from the record was done in this case. But even if it be conceded that the plaintiff, notwithstanding the repeated assurance of the physician that his injuries were slight, and that the disability caused thereby would be of short duration, still had some doubts as to their absolute correctness, he was not necessarily bound by the release which he signed, provided he was induced to sign it because of such representations and assurances. The rule is that it is not necessary, in order to avoid a contract of this kind, when the transaction is between physician and patient, to show that the patient had unquestionable belief in the infallibility of the judgment of the physician to whom he has given his confidence, and to accept, without question or doubt, the statements and representations made, by which he is induced to part with his property. It is sufficient, if the statements made and assurances given by the physician induce the patient to part with his property, even though he may have some doubt as to their absolute correctness.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

June 30.

1 Science and Art of Fitting Glasses. A. E. Davis, New York.
2 *What Has Surgery Left to Medicine in the Treatment of Peritonaitis in Adults and Children? H. W. Berg, New York.
3 *Examination of the Spinal Fluid in Dementia Paralytica. P. B. Brooks, Buffalo, N. Y.
3 Precise Definitions for Many Diseases. J. F. Leys, U. S. N.

2. **Treatment of Peritonitis in Adults and Children.**—The object of Berg's paper is to show that while surgery is the stronghold in the therapy of peritonitis, medicine, with the basic knowledge as to diagnosis, pathogenesis and etiology which it has developed in the past few years concerning this affection, has laid the groundwork for successful surgical therapy and has amplified the purely medical curative resources to an appreciable, if more limited, extent. Although the preponderance of opinion seems to be in favor of the treatment of tuberculous peritonitis by surgical means, some cases improve under the ordinary medical régime suitable for tuberculous patients. The latter method of treatment is indicated in cases of advanced pulmonary tuberculosis to the exclusion of surgical methods. In cases in which tuberculous peritonitis is the prominent lesion, especially when there is a fluid or semi-fluid effusion, or if the tumor masses are seriously embarrassing to the patient, laparotomy is the treatment of choice.

3. **Examination of Spinal Fluid in Dementia Paralytica.**—Brooks does not believe that it is yet possible to make a positive diagnosis of dementia paralytica from the cytologic examination of the spinal fluid. Nevertheless, he thinks that this examination bids fair to become a valuable aid to diagnosis in some doubtful cases. It is also frequently of use in other conditions, such as meningeal syphilis associated with meningitis. The writer has made satisfactory examinations of fluid in 29 cases. Thirteen of these have been typical paretics, 3 probable paretics, while 13 suffered from other conditions. Sixty-eight and three-quarters per cent. of the paretics showed an abnormal lymphocytosis, while the lymphocytes were normal in number in 82 2-3 per cent. of the cases other than paresis. The amount of serum albumin varied and seemed to bear no particular relation to the number of lymphocytes or to the presence or absence of dementia paralytica. A reduction of Fehling's solution was obtained in but one case.

New York Medical Journal.

June 30.

6 An Interesting Case of Pernicious Anemia. J. V. Shoemaker, Philadelphia.
7 Plea for More Catholic and Broader Views in Ophthalmology. E. N. S. Ringueberg, Lockport, N. Y.
7 Fever in Childhood Due to Other Causes than Sepsis. A. S. Wilner, New York.
8 *Ocular Eczema in Children. F. Krauss, Philadelphia.
9 *Atypical Features of Appendicitis. E. Eliot, Jr., New York.
10 Technic of Intramuscular Injections for Syphilis. W. S. Gottheil, New York.
11 *Thumb Sucking. G. B. Webb, Colorado Springs, Colo.

8. **Ocular Eczema in Children.**—According to Krauss, ocular eczema is a disease common in childhood, forming 21 per cent. of all eye diseases in children under 16 years. It is most common at the age of 2 years, becoming less frequent as the age advances. It is endemic, but especially prevalent during the months of May, June and April, in the order named. Treatment is very important in modifying its progress and tendency to relapse, and should comprise general treatment with attention to diet and hygiene, as well as local treatment for the eye; the severer and stubborn cases quickly improve when rest in bed is required of the patient.

9. **Atypical Appendicitis.**—In this, the concluding portion of his paper, Eliot reports a case of acute appendicitis simulating surgical treatment, acute appendicitis with slight symptoms and marked lesions and a chronic appendicitis, interval cases with abscess formation.

11. **Thumb-Sucking.**—Webb describes an ingenious method for overcoming this habit in infants. Taking an appropriately sized thin rubber ball, an oval hole is cut to loosely fit the wrist, and the surface ventilated by very numerous punches with a stable harness punch. A cheesecloth bag is sewed on to the oval hole and a tape run in and out of the cloth at this aperture, which can be gently tied at the wrist. A woolen mitten can be worn within this if required for cold weather. Several sizes have to be made at intervals of two months to allow for growth. For half hour night and morning these are removed and the child taught gradually to pat-a-cake and play with her own hands. After four months the child will be completely broken of the habit, but still must wear them at night as a precautionary measure.

Boston Medical and Surgical Journal.

June 28.

12 *Nature and Progress of Malignant Disease. J. D. Bryant, New York.
13 What Effective Measures Are There for the Prevention of the Spread of Syphilis and the Increase of Prostitution? C. G. Cumston, Boston.
14 *Consideration and Treatment of the Accidents of Surgical Anesthesia, with Special Reference to Prevalent Drug Treatment. B. H. Caswell, Boston.

12. See THE JOURNAL, June 9, 1906, page 1740.

14. **Treatment of Accidents of Surgical Anesthesia.**—When the shock features decidedly predominate, Caswell agrees with Crile and Horsley that no drug is of any use, except, possibly, adrenalin. Hypodermic stimulants are contraindicated. There can be nothing done which will so augment shock and diminish the chances of recovery for the patient as to give any of the nitrite group (amyl nitrite, nitroglycerin, sodium nitrite), remedies which are often used. They are distinctly vasodilators, and what is needed is high pressure, whereas the dilators give low pressure, the important feature of shock. Probably some cases that would have recovered without treatment have proved fatal on account of such medication. Adrenalin is the only drug to be used in this condition. It should be given with saline solution by intravenous infusion. The proportions of adrenalin are 1/1,000 solution, one part in 200,000 parts of saline solution. Salt solution when alone given intravenously under the skin or by rectum is of little or no benefit in cases of shock, as it does not raise the blood pressure. All other stimulating drugs, as strychnia, are out of the question for the same reason. Digitalis can be ruled out, if for no other reason, for its slowness of action. In collapse drugs may be employed with advantage, because the vasomotor center needs and can take stimulation to bring it to its proper condition. Strychnia may be used here. Alcohol is of some value in surgical collapse, but its stimulating effect is due to the chemical irritation which it causes. Cold water on the face, ammonia fumes, artificial respiration will do the work. Salt solution is indicated if the collapse is due to loss of blood. When shock and collapse are combined, the outlook is unfavorable, but treatment should be along the lines of shock. Rhythmic traction of the heart, by the hand in the abdomen and pressure against the diaphragm, should be tried in desperate cases.

St. Louis Medical Review.

June 23.

15 Treatment of Gallstones. E. A. Babler, St. Louis.
16 Surgical Anesthesia with Hyoscine Hydrobromid and Morphin. E. Lanphear, St. Louis.

Lancet-Clinic, Cincinnati, Ohio.

June 30.

17 Pathologic Physiology of the Tractus Vascularis. B. Robinson, Chicago.
18 Gastroenterostomy—Its Indications and Limitations. A. Schachner, Louisville, Ky.

Surgery, Gynecology and Obstetrics, Chicago.

June.

19 *Gram Stains of the Stools. C. A. Elliott, Chicago.
20 *Study of Five Cases of Subcutaneous or Concealed Rupture of the Intestines Treated by Laparotomy. E. W. Andrews, Chicago.
21 *Spontaneous Dislocation of the Hip Joint. J. Ridlon, Chicago.
22 *Wounds in the Ureter. W. R. Cubbins, Chicago.
23 Cholecystectomy; Its Indications and Technic. W. Van Hook, Chicago.
24 *Spontaneous Cure of Cancer. H. R. Gaylord and G. H. A. Clowes, Buffalo, N. Y.
25 *Treatment of Cases of Extensive Cystocele and Uterine Prolapse. T. J. Watkins, Chicago.
26 *Vitelline Duct Malformations. H. M. Richter, Chicago.
27 Palpation of an Ear as a Means of Accurate Diagnosis in Vertex Presentations. H. M. Stowe, Chicago.
28 *Acute Localized Inflammation of the Large Intestine. C. M. Matter, Chicago.
29 *Carcinoma in Early Life. C. G. Grulee, Chicago.
30 *Significance of Skull Defects. W. E. Schroeder, Chicago.
31 Technic of Forceps. C. B. Reed, Chicago.
32 Plastic Operation for Covering the Exposed Vulvar Surfaces with Skin After Excision of Extensive Growths of the Vulva. E. C. Dudley, Chicago.
33 Technic of Removal of Tumors of the Large Intestine Causing Obstruction. S. C. Plummer, Chicago.
34 Operative Technic in Wesley Hospital. R. Gillmore, Chicago.
35 *Temporary Splint for Fractures of the Leg. A. B. Kanavel, Chicago.
36 *New Technic of Nephropexy. A. Werelius, Chicago.

19. See abstract in THE JOURNAL, July 7, 1906, page 72.

20. **Concealed Rupture of Intestines.**—Andrews reports five cases of subcutaneous rupture of the intestines, with three recoveries. One patient was operated on too late, after several days, when a general peritonitis had developed. The diagnosis in this case was not positive before operation, as a large hernia was present, which had been treated for strangulation by force production under anesthesia. Another patient died on the table before the operation could be begun, probably from a hemorrhage. The three patients that recovered were seen consecutively, and Andrews concludes that under favorable circumstances, with a correct early diagnosis and an instant operation thereafter, a majority of torn intestines will recover. All the patients in this series were injured in one or two ways. Either the patient fell heavily, striking the front wall of his abdomen on some hard angular body, or else a heavy body fell on him while supine. Andrews believes that in this way the bowel is cut in two by the angle or promontory of the sacrum, against which it is forced when the anterior abdominal wall is pushed against the spine. Andrews makes immediate incision and washes out the peritoneal cavity with deci-normal salt solution, using a two- or three-point irrigator. The rent, if large, is closed with a Connell stitch; if small, as in multiple puncture wounds.

21. **Spontaneous Dislocation at Hip.**—Ridlon claims that normal hips do not become dislocated, except from extreme violence and with rupture of the capsule. Abnormal hips may become dislocated at any period of life up to 15 years, and perhaps later, without traumatism and without tearing of the capsules. Ridlon holds that these dislocations without tearing of the capsule should be called spontaneous dislocations, unless it is positively known that the dislocation was present at birth.

22. **Wounds in the Ureter.**—As the result of a very extensive study of the regenerative activity of the ureter to wounds involving all the coats of the tube, Cubbins presents the following conclusions: 1. Regenerative activity of the ureteral

mucosa is very marked. 2. Muscularis, submucosa and adventitia regenerate here the same as in other places. 3. Continuous suture is to be recommended in wounds of the ureter. 4. Transverse two-thirds of diameter and longitudinal wounds of the ureter heal without suture. 5. Catgut is preferable to silk, as it leaves fewer scars; there is less danger of obstruction due to kinking. 6. Sutures of wounds in small ureters nearly always cause some obstruction and renal disturbance. 7. A papillomatous formation is usually due to the presence of suture material in the lumen, but not always. 8. Van Hook's method is simpler on account of the shoe-horn effect of the incision. It also gives a wide surface for firm adhesions and causes practically no renal obstruction.

24. **Spontaneous Cure of Cancer.**—Gaylord and Clowes found that spontaneous cure of cancer in experimentally inoculated mice occurs in about 23 per cent. of the animals, and that the chances of spontaneous cure are inversally proportional to the size of the tumor. The frequency of the occurrence and its distribution in animals suggests that it may be more frequent in human beings than is generally supposed. The occurrence of spontaneous recoveries from cancer, indicating the existence of immune forces capable of terminating the disease, demonstrates that cancer is not necessarily incurable and should serve as an additional stimulus to research directed toward the discovery of a serum treatment.

25. **Treatment of Extensive Cystocele and Uterine Prolapse.**—Watkins describes an operation which he considers ideal for the relief of most cases of these displacements, especially after the menopause. After the usual preparation the patient is anesthetized and placed in the lithotomy position. The uterus is dilated and curetted, if indicated. The anterior lip of the cervix is grasped with the vulsella; the anterior vaginal wall is separated from the cervix by a semi-lunar incision, and the anterior vaginal wall is incised in the median line from the cervix to within one-half to one inch of the meatus urinarious, care being taken not to injure the bladder. With the finger covered by gauze, the bladder is separated from the uterus by blunt dissection. The uterovesical fold of peritoneum is either perforated by the finger or is grasped with forceps and incised. The wound in the peritoneum is then stretched with two fingers sufficiently to allow the uterus to be delivered through the opening. In cases in which difficulty is encountered in separating the bladder from the uterus the procedure can be much facilitated by making the separation to either side before it is made along the median line, as the attachment of the bladder to the uterus is firmer in the median line than at the sides. The anterior vaginal wall is now grasped on one side at the edge of the incision with an eight-inch forceps and separated from the bladder wall by means of gauze pressure. The same procedure is carried out on the opposite side. Separation of the anterior vaginal wall from the bladder should extend over most of the cystocele that comes into view, and should make the flaps sufficiently large to cover the uterus after it is brought into the vagina. The uterus is then delivered into the vaginal canal. A suture is passed through the vaginal flap near the urethra, through the body of the uterus, a little posterior, to the fundus, and brought out through the opposite flap at a corresponding point. The placing of this suture should vary in different cases. The fundus should be drawn sufficiently downward to support the entire prolapsed bladder wall, but care should be taken not to draw it down so firmly that it may press on the urethra and interfere with urination. This suture is then tied and another suture is passed parallel to it. Two or three such sutures are usually sufficient, as there is very little traction on them. The remaining portion of the wound is closed in much the same manner as a wound in any part of the body. The after-treatment is about the same as that usually employed in most vaginal operations.

26. **Vitelline Duct Malformations.**—Richter reports the following cases: Acute diverticulitis in a right-sided inguinal hernia; removal of the diverticulum; recovery of the patient. Intussusception caused by Meckel's diverticulum; reduction of intussusception and removal of diverticulum; death. Large congenital hernia into the cord; reposition, followed by death in three days.

28. **Acute Inflammation of Large Intestine.**—Matter reports a case of acute localized inflammation of the sigmoid flexure occurring in a woman of 78. She had suffered with severe abdominal pain for four or five days. The onset was acute; the symptoms resembled those of appendicitis, but at the end of two days the pains had localized themselves in the lower left quadrant of the abdomen. A very tender, broad, elongated, smooth, resistant, sausage-shaped swelling was palpable, extending from about the level of the umbilicus in the left mid-axillary line downward and inward to the middle of Poupart's ligament. The tumor persisted for about a week and then gradually began to get smaller and simultaneously the pain and local tenderness diminished. The bowel movements, which could be obtained only by enema, consisted chiefly of mucus. Matter says that the diagnosis of this condition is based on the finding of an elongated resistant tender mass in that part of the abdomen occupied by the large intestine.

29. **Carcinoma in Early Life.**—Grulee reports a case of carcinoma of the rectum occurring in a girl aged 16. The examining finger, on passing about two inches inside the sphincter, encountered a hard, irregular mass, evidently involving the wall of the rectum.

30. **Significance of Skull Defects.**—Schroeder claims that no protrusion is found when the dura remains intact, but that it is quite the rule when the dura is torn. In skull defects, when the dura remains intact, connective tissue fills the gap so firmly that it seems to the sense of touch as though it is bone, but the *x*-ray picture disproves this. The result of replacing bone fragments is very uncertain, as such fragments frequently become absorbed. Cases requiring mechanical devices, or Konig-Miller osteoplastic flaps, are infrequent, and should present more severe symptoms than mere absence of skull fracture. He has been unable to find cases recorded of injury to the brain resulting from skull defects.

35. **Splint for Fractures of Leg.**—Kanavel holds a blanket sidewise, so that its width is about three and one-half feet, then two boards of that length, six inches broad and one in thickness, are secured, and one folded into the blanket at either end, so gauging their position that as they are folded over and over and meet in the middle they will lie closely approximated edge to edge. He turns the whole over, end to end, and sets it down so that the two boards stand on edge and parallel, and the intervening blanket makes a trough in which the leg may be suspended as in a swing, with the boards approximated to each side of the leg. It is essential that the boards shall be of such a width that when the leg lies in this swing it will not touch the bed. As little cotton as possible is used, a small roll is placed in the popliteal space and some laterally over the bony prominences, and possibly a little about the heel, but for the most part the blanket will accommodate itself to the shape of the leg. The leg is placed in the blanket splint above described. The boards are brought up snugly to the sides, and a third board, similar in size and shape, is nailed to the ends of the boards in the blanket, extending approximately a foot and a half to either side, so that there is a T-shaped box-blanket splint, with this advantage over the blanket splint: that it never tips from side to side, thus calling for frequent adjustment, and which is superior to the box splint in that it fits the leg accurately, suspending it in a swing which is always adapted to the leg, no matter what changes may take place in its size as a result of the post-traumatic swelling. A strip of a roller bandage is tied around the upper end of the splint at the level of the knee to reinforce that end. There is no wadding of cotton at one point to the exclusion of another. Generally by the time the swelling has subsided a complete relaxation has been secured, incident to the easy position of the leg. The bones are in proper position, or so nearly so that with but little manipulation the leg is ready for the cast. If desired, for instance, in treating a severe compound fracture it may be left in this dressing until union is complete.

36. **New Technic of Nephropexy.**—Werelius describes what he calls the basket-handle operation. After having exposed and delivered the kidney, the capsule is split and deflected according to the methods of Ferguson and Edebohls. With the scissors two flaps are cut out of the capsule and to the end

of each flap a strong silk ligature, armed with a needle, is tied. The kidney is pushed down into the wound. The inner ligament or flap of capsule is drawn through the quadratus lumborum, and the outer through the thinner muscles in front of the fascia. The remaining border of the deflected capsule may be sewed to the transversalis fascia, or a small strip may be cut from it and used for suture material, the capsule and transversalis fascia being united as in McArthur's method for hernia. The muscular layer is united over the kidney. The kidney is then drawn up against the denuded muscles by the artificial capsular ligaments, the ends of which are tied in a knot and this is transfixed by a silk suture. The silk sutures used in pulling the ligaments through are cut off. The united flaps thus form a basket-handle from which the kidney is suspended. The method has been employed successfully in one case.

New York State Journal of Medicine.

June.

37 *Therapeutic Value of Antithyreoidin in the Treatment of Exophthalmic Goiter and Kindred Affections. H. L. Elsner and J. R. Wiseman, Syracuse, N. Y.
38 Observations on the Removal of the Prostate for the Cure of Prostatic Dysuria. L. S. Pilcher, Brooklyn, N. Y.
39 Treatment of Inoperable Conditions of the Prostate. G. M. Muren, Brooklyn.
40 Autopsy as a Judge of our Bedside Conclusions. B. Stow, New York.
41 Milk Problem from a Sanitary Standpoint. W. A. Baker, Islip, N. Y.
42 *Determination of the End of Danger of Infection from Patients Who Have Suffered from Infectious Diseases. L. F. Bishop, New York.
43 History of the Medical Society of the State of New York. (To be continued.) J. J. Walsh, New York.

37. **Value of Antithyreoidin in Exophthalmic Goiter.**—Elsner and Wiseman present a preliminary report on the results of their study of the therapeutic value of antithyreoidin in the treatment of exophthalmic goiter and kindred affections. In all of their cases blood pressure study proved the disease to be one in which, despite the small and thready pulse, the sphygmomanometer showed high pressure. With an improvement in the tone and character of the pulse under treatment the measure of the blood pressure showed no appreciable reduction. They are positive that antithyreoidin is a remedy which can be used for the relief of the annoying and alarming symptoms of exophthalmic goiter in typical and atypical cases. The greatest improvement is found in the relief of the tachycardia, precordial distress and tremor. This improvement is hastened by rest in bed and close attention to diet. Rest in bed and diet alone, without the administration of antithyreoidin, will not lead to the same degree of cardiac comfort. Improvement of one or more of the symptoms of the disease is likely to follow within from three to seven days after beginning the use of the remedy. If there is no improvement of symptoms after from three to four weeks of administration, the chances are against ultimate benefit from the prolonged use of the serum. In serious cases it will be necessary to continue the treatment during many months. In all cases after the disappearance of the subjective symptoms, it will be wise to administer antithyreoidin during periods varying from four to eight weeks at intervals of two or three months. Cases without marked goiter, with slight exophthalmos, tremor and the Graeffe symptom have yielded most readily to the antithyreoidin treatment. The enlarged thyroid has become perceptibly smaller, but has not returned to the normal size. Exophthalmos continues to be the most rebellious symptom, never yielding entirely to antithyreoidin treatment. Nervous symptoms usually yield as the heart becomes slower. The many fears which take possession of these patients are also relieved at the same time. The majority of their patients increased in weight. Patients who have taken antithyreoidin during a long period feel, when the serum is discontinued, as if they had been robbed of a food to which they are entitled, and return to its use with confidence and pleasure. In no case have they had occasion to regret the trial of antithyreoidin. It has always proved itself harmless. It may be given during pregnancy without fear of injuring the mother or fetus. Hypertrophied and dilated hearts offer no counter-indication to its administration.

They have administered the serum night and morning in doses of from fifteen to thirty minims. In mild cases the initial dose was from ten to fifteen minims. The serum may be given in raspberry syrup, may be taken in water or the elixir of orange peel. After having administered the serum during several weeks, its use was discontinued for a day or two at a time.

42. **End of Danger of Infection from Infectious Diseases.**—Bishop urges that the rule should be enforced that every individual who has suffered from an infectious disease of whatever kind should be restrained from such relations with nonimmune people as would render infection possible until there has been a determination of the end of danger of infection. This may be determined by experience which shows that danger of infection is over at a certain time, but in diseases of indeterminate duration it can only be determined by a careful investigation by the physician and the laboratory.

Southern California Practitioner, Los Angeles.

June.

44 The Physician's Duty to His Patient—An Address on Ethics. W. Lindley, Los Angeles.
45 *Rôle of the Peritoneum and of the Lymphatic System in Abdominal Surgery. A. J. Bouffleur, Chicago.
46 Emergencies in Internal Medicine—Treatment J. H. Utley, Los Angeles.
47 Emergencies in Surgery—Treatment. J. Kurtz, Los Angeles.
48 Emergencies in Obstetrics—Treatment. M. L. Moore, Los Angeles.
49 Emergencies in Urology—Treatment. P. Newmark, Los Angeles.
50 Internal Secretions of Certain Glands which Elaborate External Secretions Also. L. B. Stookey, Los Angeles.
51 Treatment of Fractures. W. W. Richardson, Los Angeles.

45. **Rôle of Peritoneum in Abdominal Surgery.**—Bouffleur summarizes his paper as follows: 1. That the varied lymphatic supply produces a variance in the behavior and manifestations of infections of the different abdominal viscera and may account for the diseases most frequently manifested in some of them. 2. That the normal peritoneum possesses marked powers of exudation and absorption. 3. That both of these functions may be life saving or death producing according to the asepticity of the peritoneal cavity. 4. That, while all parts of the peritoneum are capable of both exudation and absorption, the lower or pelvic zone is most exudative and the upper zone most absorptive. 5. That the difference in relative powers of upper and lower zones explains satisfactorily the evident fact that infections in upper peritoneum are more acute, more serious and produce marked symptoms more promptly than in the lower, and the operations in the upper zone are attended with greater risk than those in lower abdomen. 6. That in aseptic cases we can favor restoration of circulatory equilibrium by introducing fluids into the abdomen and favor its absorption by Clark's inverted position. 7. That in septic conditions we should lessen absorption, localize exudation in lower abdomen and provide for its rapid external drainage by Fowler's sitting position and the use of large tubular drains. 8. That as the condition of the peritoneum and the recuperative powers of the patient are equal factors with asepticity in attaining results, time and trauma are especially important elements in successful abdominal surgery.

Archives of Ophthalmology, New Rochelle, N. Y.

March and May.

52 Knife-Needle Operation for Secondary Capsular Cataract. E. Jackson, Denver.
53 Treatment of After-Cataract. H. Smith, Jullundur.
54 Etiology of Lamellar Cataract. H. Knapp, New York.
55 Plexiform Neuroma of the Orbit. C. H. Beard and E. V. L. Brown, Chicago.
56 Case of Parinaud's Conjunctivitis, Accompanied by Erythema Nodosum and Tonsillitis. C. N. Spratt, Minneapolis.
57 Case of Antipyrin Amaurosis Induced by 130 Grains Taken in Forty-eight Hours. F. C. Hotz, Chicago.
58 Case of Transient Lead Amaurosis. O. Loewe, Frankfort-on-the-Main.
59 Action of Alypin on the Eye. Ed Hummelsheim, Boston.

Physician and Surgeon.

May.

60 Modern Skiagraphic Technic. V. J. Willey, Ann Arbor, Mich.
61 Surgical Pilgrimage to Arkansas. H. C. Wyman, Detroit.
62 Value of Time and Natural Uterine Efforts in Parturition. A. N. Collins, Detroit.

Fort Wayne Medical Journal Magazine.

June.

63 Scopolamin in Anesthesia. P. Weaver, Ft. Wayne.
64 Heart Lesions and Surgical Operations. M. F. Porter, Ft. Wayne.

Woman's Medical Journal, Toledo, Ohio.

June.

65 Observations on Some European Climate Resorts. E. H. Root, Chicago.
66 Timidity. (To be concluded.) M. K. Isham, Cincinnati.

Pennsylvania Medical Journal, Athens.

June.

67 Collateral Interests of the Medical Profession. I. Cleaver, Reading.
68 *Clinical Examination of the Feces. J. D. Steele, Philadelphia.
69 Essentials of Successful Roentgen Ray Therapy. C. L. Leonard, Philadelphia.
70 Adjustment of X-Radiations for Various Physiologic Effects. R. H. Boggs, Pittsburg.
71 *Treatment of Mediastinal Carcinoma with the Roentgen Rays. G. E. Pfahler, Philadelphia.
72 Treatment of Empyema with Especial Reference to Irrigation of the Pleural Cavity. P. Y. Eisenburg, Norristown.
73 Ocular Headaches. W. Zentmayer, Philadelphia.
74 Autotoxemia. H. Wilson, Somerset.
75 Considerations on the Treatment of Typhoid. L. Litchfield, Pittsburg.
76 Eye Injuries. E. Stieren, Pittsburg.

68 and 71. See abstract in THE JOURNAL, Oct. 28, 1905, pages 1350 and 1351.

Virginia Medical Semi-Monthly, Richmond.

June 22.

77 Notes on Headaches. H. S. Hedges, Charlottesville.
78 Gonococcic Infection of Women. J. T. Johnson, Washington, D. C.
79 Extravasation of Urine. P. C. Layne, Ashland, Ky.
80 Empyema of the Accessory Sinuses of the Nose. W. W. Bulette, Pueblo, Colo.
81 Perverted Metabolism, with Special Reference to Liver Function. C. M. Hazen, Bon Air, Va.
82 More Rational Practice of Obstetrics by the General Practitioner. H. L. Finley, Pawnee City, Neb.
83 Etiology and Pathology of Urticaria. F. H. Beadles, Richmond.
84 Symptoms and Treatment of Urticaria. T. W. Murrell, Richmond.
85 A Suggestion Regarding the Management of Alcoholic and Drug Habitués. H. B. Mahood, Belfield, Emporia, Va.

Iowa Medical Journal, Des Moines.

June 15.

86 Intravenous Injections of Mercury as a Therapeutic Test in the Diagnosis of Syphilis of the Nervous System. W. F. Bernart, Chicago.
87 Materialism in Medicine. H. P. Wilson, Mediapolis.
88 Salient Points of Gastric Ulcers and Medicinal Treatment as We Meet Them in Country Practice. C. J. Pfonske, Bancroft.
89 The Osteopaths. C. A. Boice, Washington.
90 Medical and Surgical Progress. G. Cullen, Des Moines.

Medical Fortnightly, St. Louis.

June 11.

91 Acute Mastoid Abscess. F. Allport, Chicago.
92 Importance of Postoperative Treatment of Diseases of the Rectum. W. H. Stuffer, St. Louis.
93 Evolution of the Roentgen Ray. H. P. Wells, St. Louis.
94 Case of Tertiary Syphilis which Resembled in Its Course and Symptoms Phthisis Pulmonis. W. Fischel, St. Louis.
95 Syphilis of the Lung. E. Smith, Jr., St. Louis.

Colorado Practitioner, Denver.

June.

96 Tuberculosis of Joints. G. B. Packard.
97 Case of Nervous Vomiting Simulating Pyloric Obstruction; Operation. W. T. Little, Canon City.
98 Subcortical Cerebral Gumma Accurately Localized in the Comatose State. G. A. Moleen, Denver.
99 Diseases of the Stomach Requiring Surgical Treatment. I. B. Perkins, Denver.
100 Roentgen Therapy of Tubercular Glands. G. H. Stover, Denver.

Medical Age, Detroit, Mich.

June 25.

101 The Cleanly Consumptive. A. L. Benedict, Buffalo.
102 Mercurism. Q. W. Hunter, Louisville, Ky.
103 Aneurism of the Aorta. F. Billings, Chicago.

Central States Medical Monitor, Indianapolis, Ind.

June.

104 Endometritis. W. Schell, Terre Haute, Ind.
105 Gonorrhea and Its Effects in Women. A. S. Jaeger, Indianapolis.
106 Practical Points Concerning Certain Joint Injuries and Diseases. M. A. Austin, Anderson.
107 Diagnosis and Treatment of Chronic Gastritis. S. P. Scherer, Indianapolis.
108 Old and the New in Medicine in Indiana. W. W. Vinnedge, Lafayette.
109 Diagnosis of Tuberculosis. W. T. S. Dodds, Indianapolis.
110 Cardiac Stimulation for Suspended Animation by Direct Digital Manipulation. B. M. Ricketts, Cincinnati, Ohio.

Therapeutic Gazette, Detroit.

June 15.

111 Choice of Anesthetics—A Symposium. W. W. Keen, Philadelphia; W. T. Bull, R. Park, New York; W. L. Rodman, Philadelphia; R. T. Morris, New York, and others.
112 Treatment of Chronic Constipation. H. Richardson, Baltimore.
113 Uses of Adrenalin in the Peritoneal Cavity. E. Marvel, Atlantic City, N. J.
114 Cocillana as an Expectorant in Pulmonary Tuberculosis. G. W. Norris, Philadelphia.
115 Hyperemesis Gravidarum. L. Frank and Q. W. Hunter, Louisville, Ky.

Wisconsin Medical Journal, Milwaukee.

June.

116 Doctorate Address. J. C. Hodgins, Milwaukee.
117 Two Cases of Membranous Urethritis Probably Influenzal in Origin. A. W. Myers, Milwaukee.
118 Two Years' Experience in the Sanatorium Treatment of Tuberculosis in the Pineries of Northern Wisconsin. W. P. Hopkins, Cumberland, Wis.
119 Arteriosclerosis. F. S. Tuffley, Livingston, Wis.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

June 15.

120 *Medical Profession and the Issues which Confront It. W. J. Mayo, Rochester, Minn.
121 Notes on Empyema. F. G. Landeen, Stillwater.
122 Causes of Painful Menstruation in Young Girls. H. Hughes, Mankato.
123 Correlation of Medical Teaching. F. F. Wesbrook, Minneapolis.

120. See THE JOURNAL, June 9, 1906, page 1737.

Journal of the New Mexico Medical Association, Albuquerque.

June 15.

124 Trichinosis. W. D. Radcliffe, Belen.
125 Acute Suppuration of the Middle Ear. C. Losey.
126 Family Physician as a Children's Specialist. T. B. Hart, Raton.

Vermont Medical Monthly, Burlington.

June 15.

127 Clinical Considerations of Carcinoma Uteri. F. A. L. Lockhart, Montreal.
128 Eyes and Ears of School Children. F. Allport, Chicago.
129 Pathology of Chronic Nephritis. W. E. Lazelle, Barre, Vt.
130 Hypospadias Through Five Generations. T. J. Strong, Burlington.
131 Bullet Wounds of the Intestine. E. W. Melville, St. Albans.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

June 16.

1 *Injuries Commonly Associated with Displacement of the Head of the Humerus. R. Jones.
2 Torticollis, or Wry-Neck. A. H. Tubby.
3 *Wound or Thoracic Duct; Ligature; Recovery. A. Fullerton.
4 *Etiology and Treatment of Oblique Inguinal Hernia. R. W. Murray.
5 *Comparison of Phthisical with Non-Tuberculous Males. W. C. Rivers.
6 *Two Cases of Amebic Abscess of Liver. L. Rogers and R. P. Wilson.
7 Case of Pneumococcic Arthritis. S. Raw.

1. **Injuries Associated with Displacement of Head of Humerus.**—In Jones' experience the most common complication of fracture of the upper head of the humerus is dislocation of the shoulder. Out of 200 consecutive cases of complicated dislocations of the shoulder radiographed he found 16 connected with fractures of the surgical neck. In all the cases the patients were over 30 years of age and most commonly between the ages of 40 and 50. Jones believes that occasionally a fracture may follow the dislocation, but that in the majority of instances it most probably occurs synchronously. The shoulder should be reduced at the earliest possible moment. A method which has proved most successful in his experience is the forcible extension of the arm held vertically, with often very hard pushing upward of the fragment. Having reduced the dislocation, the fracture is of comparatively little moment.

3. **Wound of Thoracic Duct.**—Fullerton says that during the removal of a large number of tuberculous glands from the neck the thoracic duct was cut. An artery clip was applied to the open ends of the duct and the latter was ligated with formalin catgut. The patient was kept on the lowest possible diet for a few days, and all unnecessary movements were interdicted, so as to diminish as much as possible the pressure and flow in the occluded duct pending the establishment of the collateral circulation. A blood count made on the eighth day after the operation showed that there was very little deviation from the normal as regards the lymphocytes—the constituents of the blood most likely to be affected by the accident. Fullerton thinks that this case shows that if leakage from the duct can

be prevented and rupture avoided after ligature the collateral circulation becomes established without any difficulty. Ten months after the operation the patient was well. Fullerton says that the first indication in treatment is to stop the flow from the injured duct. This can be effected most surely and apparently quite safely by ligature of both ends. If the wound is small it may be sutured without occluding the vessel, but if large or if the duct is severed completely the most satisfactory method is ligature.

4. **Oblique Inguinal Hernia.**—A very careful review of all the evidence at hand with reference to the etiology and treatment of oblique inguinal hernia has convinced Murray that the main factor in the causation of this form of hernia at all periods of life is the presence of a preformed sac, a patent funicular process, and that whether the bowell will or will not enter this process depends primarily on the size of the opening at the internal abdominal ring, and secondarily on the strength of the muscles guarding it. As a general rule the only satisfactory way of treating a hernia is by means of an operation, and, other things being equal, the earlier in life the operation is performed the better. The essential point in the operation is so completely to obliterate the sac as to render the peritoneal surface at this level free from any dimpling or depression. In order to insure this the inguinal canal must be opened up and a ligature applied to the sac at the level of the internal abdominal ring. The divided aponeurosis of the external oblique should be subsequently united by overlapping, for the inguinal canal is thus narrowed, lengthened and its original obliquity restored.

5. **Phthisical and Non-Tuberculous Males.**—The following reasons are advanced by Rivers in favor of the view that an hereditary causal relation to phthisis may be predicated of mouth breathing and of deficient physique: 1. Both conditions prevailed to a much greater extent among consumptive males, quite independently of their disease, than among a comparable series of non-tuberculous men. 2. Whereas some causes of mouth breathing, as also physeical build; are known to be hereditary, a family history of phthisis is much more often given by those who are mouth breathers or of deficient physique—whether they be healthy or phthisical—than by others. 3. The physique incidence of mouth breathing in phthisical subjects probably differs from that in the non-tuberculous. 4. Consumptives of a naturally good height-weight ratio fall ill, on an average, at a later age than do others.

6. **Amebic Abscess of Liver.**—The two patients whose cases are reported by Rogers and Wilson were cured by aspiration of the abscess and injection of a quinin solution into the cavity without drainage. Ten ounces of pus were drawn off and three ounces of sterile bihydrochlorate of quinin of a strength of 30 grains in 4 ounces of water were injected. A dose of 30 grains of calcium chlorid was given both before and after the operation to check any tendency to oozing from the punctures.

The Lancet, London.

June 16.

8 Stray Thoughts on Tuberculosis. E. Owen.
9 Aphasia. (To be concluded.) B. Bramwell.
10 Occurrence of Metrorrhagia After the Menopause in Cases of Ovarian Tumor. A. H. N. Lewers.
11 Vacuolated Mononuclear Cells in the Blood of the Guinea-Pig. J. C. G. Ledingham.
12 *Complete Removal of Multilocular Cystic Tumor of the Pancreas. J. D. Malcolm.
13 *Hernia of the Vermiform Appendix, Probably Infantile, and Perforated by a Pin While in the Scrotum. J. A. C. Macewen.
14 *Femoral Hernia, Herniated Appendix, and Suppurative Appendicitis Due to a Pin. L. C. S. Broughton and J. T. Hewetson.
15 Diverticulum of the Bladder; Prostatic Obstruction; Operation. H. A. Lediard.
16 Case of Intranasal Chancre Simulating Nasal Diphtheria. J. D. Rolleston.
17 Examination of the Feces. R. Baumstark.
18 Analysis of the Results Obtained at the Sidlaw Sanatorium. R. C. Macfie.
19 Case of Cerebral Tumor; Operation; Recovery. H. Smith.
20 Specific Nature of the Spirocheta of the African Tick Fever. A. Breinl.

12. **Tumor of Pancreas.**—In the case reported by Malcolm it became necessary, because of an obstruction at the splenic flexure of the colon, to perform colo-colic anastomosis sixteen days after the removal of the tumor. The patient then made an uneventful recovery. The fact that the pancreas had been incised did not give rise to any subsequent trouble.

13. **Hernia of the Appendix.**—Macewen reports the case of a man 62 years of age who presented himself for the relief of a strangulated hernia, the hernia supposedly having existed for twelve years. The patient had worn a truss until two weeks before his presentation, when he began to suffer considerable discomfort, which eventually turned to distinct pain. He was found to have a large pyriform swelling affecting the right inguinal region and scrotum. The scrotal tissue was much inflamed. The testes appeared to be fused with a mass which was firm in consistence and dull in percussion. No impulse on coughing was elicited. The hernia was not reducible. At the operation the hernia was found to consist of the appendix, the latter being held in position by a pin, the point and about one-half the shaft of which projected through a small ulcerative aperture in the wall of the appendix. Appendicectomy was performed in the usual manner. Owing to the condition of the bowel and the surrounding parts it was decided not to proceed with the radical operation for the cure of hernia. The bowel having been returned to the abdomen, the inner fibrous sac which had contained the appendix was removed, after which the outer sac was ligatured, freed from the testes and likewise removed. The patient made an uneventful recovery. Although the head of the pin had perforated the appendix, there was no abscess formation.

14. **Appendix in Femoral Hernia.**—Broughton and Hewetson report another case of herniated appendix, the hernia in this instance being of the femoral variety, occurring in a woman 63 years of age. After having been present for twenty-four years, the small lump in the right groin showed signs of inflammation. A diagnosis was made of inflamed femoral epiplocele. An incision over the mass was made, an abscess containing about two ounces of fetid pus and surrounded by ragged gangrenous walls was evacuated, and a pin, incrusted with fecal matter, was found lying in the mass. Nothing resembling a hernial sac could be distinguished up to this point. The whole gangrenous mass was isolated down to the saphenous opening. After carefully covering up the gangrenous area with gauze, this was opened and the contents were readily recognized as a thickened appendix and a small mass of omental tissue. The appendix was withdrawn and amputated close to the cecum, the omental loop was divided and both were pushed just within the abdomen. A strand of iodoform gauze was inserted into the femoral canal, partly to act as a drain to the appendical stump, but chiefly to protect the peritoneum from becoming infected from the gangrenous Scarpa's triangle. A large drainage tube was passed into the bottom of the wound and the skin margin was approximated by silkworm gut sutures.

Bulletin de l'Académie de Médecine, Paris.

21 (Year LXX, No. 23.) Resolutions in Regard to Communicable Diseases, Especially Tuberculosis. See news columns, page 46.
22 La revision du Code civil. A. Lacassagne.

Presse Médicale, Paris.

23 (XIV, No. 35.) Un nouveau cas de syphilis stomacale. G. Hayem.
24 (No. 38.) Etude sur la scoliose dorsale. P. Desfosses.
25 Acute Edematous Hypertrophy of the Tongue in Scarlet Fever in Adult.—Macroglossite edemateuse aigue. J. Sabrazes and J. Bonnes.
26 (No. 44.) Bacillus fluorescens putridus et diarrhée verte (green). E. Bodin and M. Dide.
27 *Consequences of Transvesical Prostatectomy.—Suites de la prost. transvésicale. J. Moscou.
28 How Does Iodin Act?—Comment agissent l'iode et les iodiques? A. Martinet.

27. **Consequences of Transvesical Prostatectomy.**—Moscou reports the results of histologic study of the parts in a man of 68, who had been operated on for hypertrophy of the prostate by the Fuller-Freyer technic. He died twenty-four hours afterward. The anatomic findings showed that enucleation of the adeno-myomatous growths of the prostate leaves a cavity the walls of which are formed of true prostatic tissue, the original prostate having been compressed and pushed back by the encroaching growths, without losing its integrity. The ejaculatory ducts are retained unimpaired and ap-

parently permeable, the natural result of the preservation of the prostate tissue. The findings in this case show that the repair of the parts proceeds with remarkable rapidity, while the retention of the ducts favors retention of the genital functions.

Revue de Chirurgie, Paris.

Last indexed XLVI, page 1891.

29 (XXVI, No. 6.) *La résection totale des saphènes dans le traitement des varices superficielles des membres inférieurs et de leurs complications. F. Terrier and P. Alglave. (Continued.)

30 *De la péritonite généralisée par perforation au cours de l'entérite tuberculeuse. L. Bérard and M. Patel (Lyons).

31 *Stab Wounds of Thyroid Gland.—Des plaies par instruments tranchants du corps thyroïde. H. Toussaint.

32 *Study of 43 Cases of Tropical Abscess of the Liver.—Les abcès du foie d'origine coloniale. E. Loison. (Commenced in No. 3.)

29. **Total Resection of the Saphena.**—Terrier and Alglave are convinced that the resection of the saphena should be as complete as possible to obtain satisfactory results in severe cases of superficial varices, especially those with ulcers. They give illustrations of cases thus treated, showing the skin turned back after incision extending from the ankle to the hip, on the inner aspect of the leg. They operate by four different technics according to the conditions. The first aims to resect both saphenous veins and as much as possible of their varicose branches by the above long incision. They have thus operated on 6 patients. In other cases they resected merely one of the saphenous veins; in 11 cases they resected the internal and in one case the external vein. Their third procedure is merely resection of the internal saphena on the leg (2 cases), and the fourth is the circular section advocated by Moreschi, supplemented by simple or double resection of the saphenous vein in case of high leg ulcers. These procedures accomplish the best results and without danger for the patient. The results, they state, are bound to prove satisfactory. The details of the technic and the clinical experiences will follow in a second installment of the article.

30. **Diffuse Peritonitis from Perforation in Course of Tuberculous Intestinal Processes.**—Hérard and Patel analyze 2 cases personally observed, one reported by Chatin, and 23 others from the literature. The clinical picture varied, depending on whether or not the acute peritonitis was preceded by circumscribed abscess. Any aggravation of the condition in case of a known tuberculous intestinal affection should suggest the possibility of perforation. Pain is significant, it may become lessened in severity or disappear, but it generally recurs and is elicited by palpation. The lack of harmony between the pulse and temperature, slight meteorism, rigid abdomen and extension of the areas of dullness, are all suggestive, especially when accompanied by vomiting, dryness of the mouth, progressive dyspnea, chilliness and cyanosis of hands and feet. A cancer in the small intestine rarely comes to perforation. Operative treatment of the tuberculous perforation offers little chance of success. It was attempted only once in the total 26 cases reviewed and the patient rapidly succumbed. The general condition of the patient is generally too grave to allow the extensive surgical intervention which alone offers chances of success. Search for the perforation is almost sure to be fruitless on account of its small size and the fact that it is frequently hidden by a serous covering. Even if it should be readily found the patient could not tolerate the extensive resection demanded. If the abdomen has been opened, as soon as the nature of the lesions is recognized, they would hasten to complete the operation with merely palliative drainage of the peritoneum.

31. **Stab Wound of Thyroid.**—Toussaint had occasion recently to suture the thyroid in a man of 27. The gland had been cut completely in two by a stab in the throat, but soon healed after the suture. In order to arrest the hemorrhage Toussaint pedunculated the upper and lower parts of each half by a chain of catgut sutures, passing a curved needle around inside of the capsule. The capsule was then sutured over them. The patient soon recovered.

32. **Tropical Abscess of the Liver.**—Loison discusses the diagnosis and treatment of tropical abscess of the liver, from an experience of 44 cases. In 35 the mortality was 40 per cent.; in 10 cases of acute suppurative hepatitis it was 70 per cent. while it was only 28 per cent. in the 25 chronic cases. The gravity of suppurative hepatitis may be due to the multiplicity of the abscesses developing in the liver, or to the variety of infectious accidents that may complicate it. Abscesses of the liver display a tendency to reach the convex surface of the organ, and the exploratory trocar should be inserted at the intercostal or epigastric point of tenderness located in the thoraco-abdominal region. When pus is once discovered the trocar should not be withdrawn before opening up the focus, for fear of losing it again or of allowing the escape of pus through the trocar hole into the adjoining regions. He usually resects a rib to obtain better access, incises the pleura and diaphragm, and thus reaches the liver. The transpleural route ensures better drainage than an abdominal operation, as a rule. He describes the precautions to prevent escape of pus into the pleura or elsewhere, and reviews the complications liable to develop.

Semaine Médicale, Paris.

33 (XXVI, No. 24.) *Spikes for External Prothesis in Case of Complicated Fracture of the Leg.—Le traitement sanglant des fractures compliquées de jambe par l'appareil à prothèse externe. Jaboulay (Lyons).

33. **Row of Spikes for External Prothesis of Fractures.**—Jaboulay uses spikes to hold fractured bones in proper coaptation while healing. The appliance is a strip of steel with five long spikes set in a row. When the bones have been placed in proper position the spikes are driven into the bone deep enough to hold the ends firmly. The spikes are not exactly parallel, but converge slightly, so that the end spikes exert slight traction on the bones, pushing them together. The appliance is left in place as long as the limb is immobilized. He advises not to trust to a plaster cast alone, but always to apply some external prothesis which holds the fractured bone immovable after reduction. Nothing has answered the purpose so satisfactorily as the little set of spikes he here describes and illustrates. He disapproves decidedly of prothetic appliances left permanently in the tissues.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed XLVI, page 1325.

34 (LIX, No. 1.) *Diagnose und Pathogenese der im Kindesalter häufigsten Form der Concretio pericardii cum corde. H. Flesch and A. Schossberger (Budapest).

35 *Ueber die Struktur und die diagnostische Bedeutung der Curschmannschen Spirale bei Asthma bronchiale. W. Predtetschensky (Moscow).

36 Causes of Predisposition of Lung Apex to Tuberculosis.—Ursachen der Disposition der Lungenspitzen für Tub. L. Hofbauer (Vienna).

37 *Poisoning from Canned Beans.—Ueber eine Massenerkrankung an Botulismus infolge Genusses "verdorbener" Bohnenkonserven. A. Fischer (Darmstadt).

38 *Bemerkungen zur Sigmoiditis. A. Simons (Berlin).

39 *Morbid Appetite, etc., with Erosions and Ulcers in the Stomach.—Die Reizerscheinungen des Mundes, das Verhalten des Appetits und die Heisshungererscheinungen bei den Erosionen und Geschwüren des Magens. W. Plönies (Wiesbaden).

40 Roentgen Outlining of Heart.—Bestimmung der sogenannten wahren Herzgrösse mittels Roentgenstrahlen. F. Moritz.

41 *Ueber hämorrhagische Diathese bei Typhus abdominalis. F. Meyer and W. Neumann.

34. **Adherent Pericarditis in Children.**—Flesch and Schossberger have been studying the relics of adhesive pericarditis in children, and have been conducting experiments on dogs to investigate the causes of the symptoms observed. They found that adhesion of the visceral and parietal pericardium always induced isolated ascites in the dogs. This shows, they think, that the adhesion in itself produces a pure portal stasis of cardiac origin, and harmonizes with what is observed in the clinic. As the result of their research they announce that this most frequent form of adhesion of the pericardium in children is characterized by a special symptom-complex. The most striking symptom is the excessive, isolated ascites; the face is slightly edematous, giving it a doughy look, pale, with cyanosis of the lips and ears and enlargement of the liver. Except for the small waved, rather rapid pulse, none of the symptoms observed points to the heart. On account of the constancy of the above symptoms, this form of adherent pericardium presents an easily recognized clinical picture. The cyanosis does not subside after tapping. The postmortem findings in 4 cases are described. In 4 others an operation was performed, a herniotomy or the Talma operation. Articular rheumatism was known in the history of 2 of the patients,

and the other spoke of an affection of the lungs or pleurisy in the past, which probably was the unrecognized pericarditis causing the adhesions. Contrary to the general assumption the ascites preceded edema in the extremities. Adhesive pericarditis does not cause always the above clinical picture, but when the latter is observed an adherent pericardium can be safely diagnosed.

35. **Curschmann's Spirals in Bronchial Asthma.**—The results of the investigations reported in this article may be summarized in the statement that the principal constituents of the typical Curschmann spirals are eosinophile leucocytes; the mucus serves merely as a vehicle to bind them together. Only the isolated central thread and the rudimentary spirals are of simpler structure, and consist merely of extremely thin fibers of mucin. Any ordinary cough or hacking is sufficient to transform a tenacious sputum into spirals. The asthmatic attacks increase the number of the spirals, but single spirals can originate without the asthmatic respiratory movements. The spirals are not specific for bronchial asthma, but only the peculiar bronchial secretion, out of which the spirals are formed. This secretion consists of a large amount of eosinophile cells, and from the latter in turn originate the Charcot-Leyden crystals.

37. **Poisoning from Canned Beans.**—Fischer gives the particulars of the severe poisoning of a number of persons in a cooking school at Darmstadt, mentioned in the news columns at the time (1904). Eleven out of the 21 persons affected died. The beans had been put up in the school during the preceding autumn and were eaten as a salad without cooking. They were unusually soft when taken out of the can, and the salad acquired a cheesy smell after the vinegar had been added. The symptoms were those of typical botulismus, the same as observed from sausage and fish poisoning, although there were no mydriasis, no fever, no gastrointestinal disturbances, and the consciousness was unimpaired to the last. The ocular muscles were affected, the ptosis first attracting attention; the secretions were altered, and the entire motor sphere was enfeebled to actual paralysis, the disturbances in the innervation being symmetrical. Death was due to the severe bulbar disturbances affecting the tongue, throat, respiration centers and heart, with death from asphyxia. The incubation period lasted from 24 to 48 hours. The assumption seems plausible that the toxic substances must have reached the beans in the manure, which had been taken from the pig pen, and that the beans had not been thoroughly washed before being sealed up. Fischer adds that the safest way to destroy the toxins in canned goods which do not arouse suspicion by their aspect or smell is to cook them or to boil the can before opening. One person ate the salad freely but experienced only slight disturbance from it. He was the only person who had heated the beans. His dinner having become cold, he set the plate in the oven and heated the whole, beans and all, until they simmered.

38. **Sigmoiditis.**—Simons describes the postmortem findings in a case of chronic inflammation restricted exclusively to the sigmoid flexure.

39. **Significance of Morbid Appetite with Erosions and Ulcers of the Stomach.**—Plönies discusses the phenomena of irritation in the mouth and the behavior of the appetite in case of gastric lesions, remarking that sudden, imperative hunger (Heisshunger), seems to be peculiar to erosions and ulcers of the stomach and deserves special attention. Each attack of this morbid appetite announces another step in the progress of the stomach lesion. The sudden, imperative hunger accompanies the transformation of the superficial erosion into an ulcer, and the progress of the ulcer into the phase of imminent hemorrhage, perforation or other complication. The onset of the morbid appetite follows some chemical irritation of the surface of the lesion as the protecting surface becomes eroded. His extensive experience through sixteen years has demonstrated that this symptom of attacks of sudden, imperative hunger has the diagnostic importance of a physiologic experiment. It is a sign that the gastric lesion has lost its protecting covering. The morbid appetite comes on when the stomach is empty, and its appearance is always followed by exacerbation of the symptoms from the lesion; the phenomena of nervous irritation in the vagus-sympathetic domain recur with greater or lesser intensity, and the area of tenderness on percussion widens. In treating gastric ulcer, the importance of regularity in the meals, not allowing the stomach to remain empty unduly long, is the corner stone of proper treatment. Any excess or error in diet, drinking cold water, or the like, may bring on an attack of the morbid appetite after it has vanished either spontaneously or under treatment. This symptom of sudden, imperative hunger serves also to differentiate a lesion in the stomach from an affection of the neighboring organs. It also aids in differentiating symptoms due to irritation of the surface of the ulcer from those due to fermentations or intestinal disturbances of toxic origin. Bulimia occurs also in diabetes and in convalescence from tetanus, but without the local and reflex phenomena peculiar to the gastric form. He has observed it in 1,036 out of 1,200 patients with erosions or ulcers in the stomach. The irritation from the lesions causes an incessant secretion of gastric juice, which has an irritating action in turn on the lesion, contributing to the progressive tendency of the ulcer. In cases without bulimia, reflex symptoms may be observed from irritation of the lesion, but they are liable to divert attention entirely away from the stomach. In one instance a young physician experienced vertigo and symptoms of ataxia in the legs, whenever his stomach was empty. These symptoms vanished completely when he complied with the order to eat something every three hours without fail. The fact that these reflex symptoms vanish when food is taken is their chief characteristic. They existed alone in 20 patients, and included headache, vertigo, or both, tickling in the throat, weakness and retching. In one case dizziness and amaurosis recurred regularly when the stomach became empty. In 300 cases the attack of imperative hunger was noticed within the first six months of the development of the stomach lesion, in others not until later, and in 10 per cent. not until after from 16 to 40 years. In some cases the reflex phenomena included rumbling in the stomach or intestines and a feeling of emptiness in the stomach, in others nausea, with discomfort, pains, etc., the one feature common to all being that the symptoms appeared when the stomach was empty, and vanished when food was taken. In most cases the food never caused discomfort, the latter developing only after the food had passed out of the stomach. The proportion of hydrochloric acid in the gastric juice does not seem to have much influence on these phenomena—all grades of acidity down to zero having been observed in the different cases. The onset of the morbid appetite was sometimes accompanied by a feeling of gnawing, burning, rubbing, boring, painful pulling or other disagreeable local sensation. In 26 cases the patients complained that the gnawing pain was so great that it left them weak, with a cold sweat. A burning sensation alone was felt in 203 cases; bulimia alone in 624 cases. These various forms of the morbid appetite sometimes merged into each other, and in 13 cases they were accompanied by pains in the back. The gnawing sensation was interpreted by some as a sign of tapeworm, although it has nothing to do with tapeworm. Even if a tapeworm happens to be present, the morbid appetite vanishes completely when the stomach lesion is cured. In 5 instances pulsation was noticed in the stomach region, with bulimia. In a few others the gnawing sensation was referred to a part remote from the stomach, but as a rule it coincided with the area of tenderness. In 19 cases the attack of bulimia was followed by syncope; in 8 cases it induced morbid yawning or other reflex phenomena; trembling followed in 115 cases.

41. **Hemorrhagic Diathesis in Typhoid.**—This communication from von Leyden's clinic describes 3 cases of the hemorrhagic diathesis in typhoid. The patients were women between 24 and 48, all with a severe form of the disease, but all recovered. Treatment consisted in the usual measures, supplemented with gelatine and copious saline infusion. The heat was oppressive at the time the three cases were under treatment, and possibly may have favored the hemorrhagic diathesis. It first became manifest during the third or fourth week. There was no tendency to nosebleed.

Hospitalstidende, Copenhagen.

Last indexed XLVI, page 761.

42 (XLVIII, No. 49.) *Behavior of Lymphatics in Primary Syphilitic Infection in Women.—Om. Lymphekarsystemets Forhold ved (primair) syph. Infection hos Kvinder. R. Bergh.
43 (No. 50.) Diagnostiske Tuberkulin-Injektioner. G. E. Permin.
44 (Nos. 51-52.) *Den saakaldte Enteroptosis og dens chirurgiske Behandling. T. Rovsing.
45 (XLIX, No. 1.) *Studier over den kroniske Gastritis. IV, Achylia gastrica. Knud Faber.
46 Undersogelser over Spirochæta pallidas Forekomst ved Syfilis. A. Brönnum.
47 (Nos. 2-3.) Undersogelser over Urin-Sediment. I. De hyaline Cylindre. P. Liebmann.
48 Et sjaeldnere Tilfaelde af (unilateral) Syringomyeli. A. Wimmer.
49 (No. 4.) *Om Chirurgisk Behandling af Ischias (sciatica). A. Pers.
50 (Nos. 5-7.) *Den medfodte Pylorus-Stenose og dens Behandling (congenital). C. E. Bloch.
51 (No. 8.) *Intestinal Invagination.—Tarminvagination. I Sorensen.
52 (No. 9.) *Kan en Difteritis-Epidemi stoppes ved preventive Indsprojtninger af Antidifteri-Serum? H. Maag.
53 Chirurgie minor. L. Bramson. New model for knife, retractor, etc.
54 Om Leukocyt-taelling (count). O. Thomsen.
55 (No. 10.) Sinus-Trombosens Behandling. F. Pontoppidan.
56 (No. 11.) *Return Cases of Scarlet Fever.—Af udskrevne Sodskende smittede, paa Hospitalet genindlagte Tilfaelde—ved Scarlatina. Sorensen.

42. **Behavior of Lymphatics in Primary Syphilitic Infection in Women.**—Bergh relates the findings in the lymphatic system in 1,260 women examined during the last eighteen years. The women were mostly young and 321 were professional prostitutes. The inguinal glands were found enlarged in practically 100 per cent., the posterior cervical glands in 83 per cent., the submaxillary in over 43, the axillary in over 33, the epitrochlear in over 15, the mastoid in 10, the anterior cervical in over 8, the occipital in over 4, the paramammary in 3, and the popliteal in 0.7 per cent. The enlarged glands were indolent as a rule, but sometimes they were a little tender. Suppuration occurred in only 15 cases, about 1.2 per cent. of the total. The suppurating glands were the inguinal in 8, the submaxillary in 5 and axillary in 1. The literature on the subject is reviewed.

44. **Surgical Treatment of Enteroptosis.**—Rovsing protests against the term enteroptosis. The condition known by this name, he says, is better described as splanchnoptosis, partial or universal, according as one or more of the abdominal organs are involved. He has performed nephropexy in 100 cases, hepatopexy in 18 and gastropexy in 54. The results obtained from these operative measures have been most excellent. He gives illustrations of an abdominal supporting bandage, but adds that it is preposterous to expect that even the best bandage can restore the sunken organs to place and hold them there. All that can be attained with a bandage is to increase the intra-abdominal pressure by the elastic pressure on the lower part of the abdomen, and thus to lift up the intestines which then serve as an air cushion to hold up the organs below the diaphragm. This can be accomplished only when the ptosis is due to the relaxation of the abdominal walls and consequent reduction in the intra-abdominal pressure. The bandage can do no good in the case of splanchnoptosis in a woman who has never been pregnant, with unrelaxed, strong and muscular abdominal walls. The ptosis in these cases can not be ascribed to the same cause as in women who have borne children. It must be the result of a congenital weakness of the intra-abdominal supports, a lesser vitality of the tissues, possibly supplemented by abuse of the corset, and the general shape of the body. The diagnosis of splanchnoptosis in a virgin is somewhat difficult. There is no lack of symptoms, but the strong, muscular abdominal wall hinders palpation and examination of the abdominal organs. Nephroptosis alone is liable to induce symptoms simultaneously in the urinary apparatus, the intestines and the genital organs. The symptom that attracts attention first, as a rule, is an annoying frequency of scanty urination, with the characteristic that the incessant desires cease when the woman lies down. This symptom is frequently attributed to bladder trouble, and the patient is treated for a non-existent cystitis, although the urine is entirely normal. In rarer cases there is intermittent hydronephrosis. In many cases, however, the symptoms due to the displaced kidney do not attract attention to the urinary apparatus at all, but seem to be those of intestinal dyspepsia. It is sometimes difficult to differentiate nephroptosis with secondary colitis from colitis with appendicitis, and the splanchnoptosis is frequently mistaken for a genital affection. Patients complain of pains in the side corresponding to the displaced kidney at each menstruation, suggesting ovarian trouble. In 3 out of his 106 cases of this kind the woman had been castrated solely on this account. The pains persisted, unmodified, after the removal of the ovaries. One of the reasons, he declares, why nephroptosis is so frequently overlooked is because the patient is examined as she reclines. The kidney slides back into its normal place as she lies down, and nothing abnormal is discovered. If the patient is in bed he tells her to get up and hop on both feet around the room for several minutes. Or to sit up in bed, and, supporting herself with both hands on the sides of the bed, to raise herself in the air and then allow herself to drop down again on her seat, repeating this a number of times. The physician then palpates the normal site of the kidney with both hands, from front and back. He thinks that gastroptosis is much more frequent than is generally recognized. In only 12 out of his 53 cases of gastropexy had the condition been diagnosed correctly. Constipation and its consequences were noted in all the cases. In the moderate degrees the patients complained of discomfort, a sensation of oppression over the entire abdomen or only in one side or in the region of the cecum or ascending colon. These uncomfortable sensations vanished as the patient reclined, but returned as she stood, and continued severe during work or exercise. The woman tires easily, becomes nervous and irritable, loses appetite and strength. On these are superposed in the severer cases and also in patients with virginal abdominal walls other symptoms such as cardialgia, pains in the abdomen on eating and after meals, and sometimes vomiting, the dread of the gastric disturbances causing the patients to starve themselves into actual cachexia. This gastroptosis cachexia is often mistaken for ulcer or cancer, even by skilled physicians. The disturbances depend on the quantity rather than on the quality of the food ingested; a small amount of irritating food causes little disturbance, while a large amount of even milk or water brings them on, the reverse of what is observed in case of ulcer. The pulsation of the aorta can be perceived in the epigastrium as it is not hidden by the stomach. Examination of the stomach content after a test meal shows normal conditions, but inflation of the stomach through a tube will generally reveal the altered position of the organ with sufficient accuracy. His technic of nephropexy aims to fasten the kidney to the soft parts in its normal, natural niche. The organ can move comparatively freely with the respiration. He refrains from throwing a suture around the kidney as he thinks this invites necrosis, and he also dispenses with any suture in the kidney tissue proper.

45. **Achylia Gastrica.**—Faber has encountered 35 cases of primary achylia during the last three years. In 11 the patients exhibited symptoms on the part of both stomach and intestines. Cardialgia was the most frequent symptom. It may range from simple oppression or burning to violent pain; it generally appears after eating, and lasts several hours. Sometimes nausea, pyrosis and vomiting may be observed. There may be diarrhea or constipation, or both alternating. The symptoms of dyspepsia may be accompanied by nervous symptoms, headache, vertigo, broken sleep, depression. In 10 of the patients the intestinal symptoms masked the gastric; in 10 there were only gastric disturbances, and in 3 other patients the achylia was a chance discovery, not accompanied by any symptoms. He believes that the achylia is always secondary to chronic gastritis. With correct diet the achylia usually rights itself. Hydrochloric acid may be found useful, as also bitters, especially condurango.

49. **Surgical Treatment of Sciatica.**—See summary in THE JOURNAL, June 16, 1906, page 1896.

50. **Congenital Stenosis of the Pylorus.**—Bloch reports a dozen cases of congenital stenosis of the pylorus in infants. All were healthy, well-grown children, who began to vomit

their food without any appreciable cause, after intervals of from a few days to four weeks after birth. This symptom was accompanied by constipation and scanty secretion of urine. The pylorus in such cases can be palpated readily, especially after rinsing out the stomach. After a time the vomiting is less frequent, and peristaltic waves become noticeable, especially when the child is at the breast the waves show more plainly. The best results were attained with Heubner's plan of feeding the infants copiously, according to their age and weight, notwithstanding their vomiting, supplemented by poultices to the abdomen and opium to aid in controlling the spasmodic constriction. The poultices are applied for two hours at a time and renewed every half hour. Lavage of the stomach is not required. The 6 infants treated on these principles all recovered. His experience indicates the importance of curing first the concomitant gastritis, if such be present. It also emphasizes the great value of buttermilk in such cases. Two of the children were treated with a Loreta operation and both died; 2 others died soon after they were received in the hospital. All the others recovered.

51. **Intestinal Invagination.**—Sörensen reports 6 cases. The first was in a male child 5 months old with ileocecal invagination successfully reduced at the twenty-second hour by laparotomy. The second patient was a girl of 7 with invagination of the ileum. The operation was not undertaken until three weeks after the first symptoms, but the child recovered after resection and enteroanastomosis. In one infant a temperature of 40.2 C. suggested diffuse peritonitis from the invagination, but the latter was found uncomplicated. In a girl of 14 there was an interval of two and a half months before surgical intervention and the child recovered. Two of the infants died, one of bronchopneumonia four days after the operative reduction of the invagination, and the other two days after a laparotomy and an apparently successful bloodless reduction.

52. **Arrest of Diphtheria Epidemic with Antitoxin.**—Maag's experience is certainly encouraging. An epidemic of 125 cases of diphtheria in a Norwegian town was arrested by the systematic preventive use of diphtheria antitoxin in all the healthy members of the families attacked. Out of the 423 persons thus immunized, only 3 developed diphtheria later, and this not until after intervals of from 35 to 56 days. In some cases the parents, who had not been injected, developed diphtheria, while all the children escaped. The immunity conferred lasted about five weeks.

56. **"Return Cases" of Scarlet Fever.**—Sörensen states that out of the 10,299 cases of scarlet fever treated at the Copenhagen Contagious Diseases Hospital, 372, or 3.6 per cent., were return cases, that is, occurring in other members of the family after the return from the hospital of the child first attacked. The most striking example was in a family with seven children. One was received in the hospital October 22, and was dismissed December 17. Five days later a brother developed symptoms of scarlet fever and he remained in the hospital until February 15. March 24 a sister arrived at the hospital with the same symptoms and was dismissed May 25, and June 1 another sister was received. In another family a child entered the hospital August 15 and left October 9. A brother was received October 17. He left the hospital after 80 days of treatment, with a discharge from the ear not quite cured; another brother was received 17 days later, and three days after this the fourth and last child in the family. The return cases were received after an interval of from 2 to 10 days in 163 cases, of 11 to 20 in 77, of 21 to 31 in 30, of 34 to 38 in 2, and once after an interval of 70 days. The children are kept in the hospital for about eight weeks. Of course, a larger number of return cases actually occur than are brought to the hospital. Other cases of infection outside of the family are not considered in these statistics. The particulars are given regarding the strict measures taken to prevent infection. During some years the outgoing children were given a "sublimate bath," in others they were anointed with eucalyptus oil, in others they received both and in others the throat and nose were disinfected with creolin. The proportion of return cases remained about the same each year, the percentage infected within 11 days ranging from 1.2 to 2.7 per cent., and within 21 days from 2.1 to 3.7 per cent.

Gazzetta degli Ospedali, Milan.

Last indexed XLVI, page 1484.

57 (XXVII, No. 6.) Mortalita per tuberculosi in Italia durante gli anni 1897-1902. C. Sforza.
58 (No. 9.) Tracheotomia od intubazione? M. Fasano.
59 *Sulla pseudo-digestione putrefattiva. C. Ferrai.
60 2 casi di malaria acuta primitiva nella convalescenza del tifo. P. Trapani.
61 (No. 12.) Albuminurie studiate col metodo della precipitazione frazionata. A. Barlocco.
62 Sulla genesi delle scosse ritmiche del capo nel morbo di Flajani-Basedow (cause of jerking of head in exophthalmic goiter). Bocciardo.
63 *Potere ipertensivo degli estratti surrenali dell' uomo in alcune forme morbose (suprarenal extracts from human subjects). A. Conti and O. Curti.
64 *Impiego di lievito di birra contra la tonsillite flemmonosa (yeast). U. Melzi.
65 (No. 15.) *Di alcuni criteri prognostici nella tifoide. Curlo and Goggia.
66 Methylene Blue Test of Urine.—Intorno alla cosi detta bleumetilenereazione. M. Carletti.
67 *Patogenesi dell'itterus grave in gestanti (icterus in pregnancy). P. Gioielli.
68 *Epidemia di morbillo (measles). E. Leonardi.
69 (No. 18.) *Alcune note sul tifo (typhoid fever). L. Peserico.
70 *Triangolo paravertebrale di Grocco nelle pleuriti sierose dell'infanzia. A. Vignola.
71 Sulla terapia del cancro cutaneo. A. Campani.
72 *Infezione pneumococcica primitiva dello stomaco e dell'intestino. Peritoniti e polmoniti secondarie. B. Marchicio.
73 *Prevenzione nell bambino delle malattie dell'adulto (prevention of disease in children). P. G. Batta.
74 Variazioni dell'apnea volontaria durante le inalazione solfidriche (therapeutic inhalation of sulphurous gases). P. Sabbatani.

59. **Putrefactive Pseudo-Digestion.**—Ferrai asserts that he was the first to call attention to the fact that the digestive processes are liable to continue their action for several hours after death. He is now studying the pseudo-digestion due to putrefactive processes after death. He found that they are more pronounced in the semi-fluid parts of the stomach content than in the parts not yet acted on by the digestive juices.

63. **Pressure-Raising Power of Suprarenal Extract.**—The experiments described were made with extracts of suprarenals obtained soon after death from 23 cadavers. It was found that the cadaveric autolysis did not modify the specific action of the suprarenal extracts from well-preserved cadavers twenty-four hours after death. The suprarenal extracts all displayed about the same specific blood-pressure raising property, irrespective of the terminal affection. In animals, on the other hand, succumbing to rapidly fatal experimental toxi-infections, the specific action of the suprarenals seemed to be much lowered.

64. **Brewer's Yeast in Phlegmonous Tonsillitis.**—Melzi reports a number of cases of suppurating peritonsillitis aborted by administration of from 8 to 20 gm. of brewer's yeast in the twenty-four hours. It was taken in sweetened milk in three doses and rapidly cured the incipient cases and improved all.

65. **Prognosis of Typhoid Fever.**—The relations between the pulse and the temperature curve, the agglutinating power and the arterial pressure have been carefully noted in 700 typhoid-fever patients at Maragliano's clinic during the last few years. The prognosis was always found favorable, as a rule, when at the same time the pulse was slow and the agglutinating power high. On the other hand, the prognosis was grave when the pulse was rapid and the agglutinating power low. The course and outcome of typhoid fever are evidently decided, he states, by the aptitude of the cell to produce antibodies and the anatomic-physiologic condition of the heart and its nervous apparatus. These two factors are independent of each other. The lowest arterial pressure was found in the gravest cases. Experiments on laboratory animals demonstrated that typhoid virus has a marked depressing action on the ganglia of the heart. The experiments were made on the isolated and normal heart with cultures of the typhoid bacillus or with serum from typhoid patients. It seems probable that in man the nervous regulating apparatus of the heart is especially susceptible to the action of the typhoid toxins, and it reacts with a retarding influence on the heart beat. Thus a special sensibility on the part of the vagus indicates that the nervous apparatus presiding over the circulation and the movements of the heart is in good condition. This is demonstrated by the cases of actual bradycardia observed in certain mild cases of

typhoid. In the severer cases this special sensibility becomes deadened and the conditions then favor the production of the more rapid heart beat, reduction of the arterial pressure and the other phenomena leading to final paralysis of the heart.

67. **Icterus in Pregnancy.**—In this communication from Bossi's clinic at Genoa 5 cases of severe fatal icterus in pregnant women are described, with a series of experiments on rabbits inoculated with toxins from bacteria cultivated from the feces or organs. The toxins seemed to display an elective action on the livers of the animals. In some the findings were analogous to those of acute yellow atrophy of the liver. The article is illustrated.

68. **Study of Spread of an Epidemic of Measles.**—The day after the first case of measles was observed all the schools were closed down, but, notwithstanding, in a few days nearly every child in the district presented symptoms of measles. The invasion was like a cloudburst, and 600 cases were reported before the epidemic finally died out six months later. Koplik's spots were noticed in about half the cases, sometimes six or seven days before the eruption appeared. A map of the tract affected shows that the epidemic proceeded along a comparatively narrow, almost straight line from southwest to northeast. Part of the way is along a river and part along the main highway, but both river and highway diverge from the line of the epidemic, and other adjoining or interposed districts through which the river or highway pass did not present a single case. The conditions of this epidemic suggest that the germs were spread by way of the wind. The sudden invasion and the continuance of the epidemic along the path of the prevailing winds, in a mountainous country, with the entire escape of districts in shut-in valleys, harmonize with this conception of air-borne contagion. In 2 cases tuberculous meningitis developed afterward, in others conjunctivitis, and other serious after-affections were observed in many instances. Measles alone does not seem to be a very serious affection, but danger comes when it is complicated with infection from other germs. The difference between the mild and the severe cases of measles is so great that mere variation in the virulence of the measles germ is inadequate to explain it. A severe course must be due to associated infection. Treatment should aim to improve the hygienic condition and to keep away all possible infection from other sources.

69. **Notes on Typhoid Fever.**—Peserico mentions that all his cases of typhoid fever in nursing women have terminated fatally. Also that a number of his cases which seemed to be of the mildest form suddenly assumed an almost fulminating character. He has also noticed that drugs given to act on the heart are much more effectual when the circulation has previously been stimulated, as a preliminary, by mechanical and hydrotherapeutic measures, thus allowing the heart tonics a chance to work. It has been his experience that the course of epidemics is graver when the season is rainy and cold and after an inundation.

70. **Grocco's Triangular Dullness.**—Vignola found in 3 children the triangular area of dullness on the side opposite the pleural effusion, first described by Grocco. The dullness gradually subsided as the effusion was absorbed. It also subsided in one case as the serous effusion became purulent. The triangular area of dullness is perceived in the back, along the spine, the base line extending outward for from 3 to 6 cm. from the vertical line along the spine. Injecting a fluid into the pleura of the cadaver does not cause this area of dullness unless the diaphragm has been previously immobilized by injecting gelatin beneath it.

72. **Primary Pneumococcus Infection of the Digestive Tract.**—Marchisio reports 5 cases with secondary peritonitis or pneumonia. All the cases were observed in the course of three months, the primary lesion being multiple ulcers in the stomach and intestines, as was determined by the autopsy in 4 cases. The patients were all adults. The secondary pneumonia in these cases always affected the lower lobes, as also in Dieulafoy's 2 cases. The symptoms of ulcerative gastritis appeared first, the peritoneal and pulmonary symptoms not developing for several days. In one patient, a woman of 35, the ulcers evidently passed into a chronic stage with occasional hematemesis. A milk and fluid diet, continued for months, with no food for a few days after a hematemesis, suprarenal preparations for a few days, and ice to the abdomen were the measures found effectual in this case. The patient kept fairly well nourished under this treatment.

73. **Prevention in Children of Disease in the Adult.**—Batta expatiates on the great importance of detecting the tendency to certain affections in their early stages and curing them before they become irreparable. Scoliosis, for instance, is seldom diagnosed until the deformity is well established. Spasms in a child are attributed to worms or other causes, not to latent epilepsy, until when grown to adult age he has the typical epileptic seizure. Bronchial asthma in the adult may have been heralded by slight asthmatic disturbances in the child to which no one paid attention. If the course of ideas, slight psychic deficiencies, etc., in children were better studied and guided many adults, he says, might escape insanity later. Umbilical hernia in the adult is the result of umbilical hernia in the child, which, although possibly healing spontaneously, leaves a predisposition for later recurrence. The same might be said of inguinal hernia. The daily bath for infants may induce icterus later in the predisposed if the temperature and other conditions are not carefully regulated. As the child grows, attention should be paid to its harmonious development, whether the great cavities of the body are developing proportionately to its size, etc. The physician watching over the development of a child, Batta states, can guide it to the harmonious proportion between its various organs and parts, which is the best safeguard against disease. Preventive medicine has to be based on accurate observation to be effectual. Its field is particularly encouraging in children as they are in the formative period, but it requires a constantly vigilant eye and a skillful hand. The physician, becoming counselor in hygiene for the family, can educate the parents to direct the steps of their children into the ways of health.

NEW PATENTS.

Recent Patents of Interest to Physicians:

820948. Device for treating the nasal passages. Edward Baum, Knoxville, Tenn.
820950. Medical instrument. Karl A. Bode, New York.
821354. Inhaling apparatus. Theophil H. Gebauer, Cleveland, Ohio.
821291. Benzoyl succinyl peroxid and making same. Alexis C. Houghton, Syracuse, N. Y.
821180. Electrical massage and vibrator machine. Sampson W. Moon, Chicago.
821315. Stethoscope. Charles M. Root, Philadelphia.
821259. Douche apparatus. Charles P. T. Roux, Niort, France.
821141. Lens-finder for clinical thermometers. Waldemar Ude, St. Louis.
821004. Vaporizer. Henry A. Veazie, New Orleans.
821389. Medicine-distributor. Charles L. Wells, St. Paul, Minn.
821783. Apparatus for promoting muscular or physical development. Frederick M. Clease, London, Eng.
822101. Machine for forming pill-mass rolls. Henry Copleston, Cincinnati.
821619. Surgical arm-splint. Ezra N. Drier, Vancouver, Canada.
821620. Casein solution and producing same. Henry V. Dunham, Bellows Falls, Vt.
822197. Surgical table. Wm. Evans, Norfolk, Va.
822110. Syringe for subcutaneous or other injections. Anne A. Gaillot, Paris, France.
822119. Invalid-bed. George Harden, Toledo, Ohio.
821655. Radium surface. Hugo Lieber, New York.
821831. Vibrator. Henry F. Rooney, Randolph, Mass.
822019. Disinfecting apparatus. Wm. H. Rose, Baltimore.
822020. Disinfecting apparatus. Wm. H. Rose, Baltimore.
822079. Hypodermic syringe. Louis Roussy, Geneva, Switzerland.
822092. Surgical appliance. Wm. L. Woodruff, Troy, Ariz. Ter.
822811. Truss. Gustav C. Abraham, Flint, Mich.
822379. Pharmaceutical compound. Fritz Hofman, Elberfeld, Germany.
822385. Artificial leg. John A. Peer, Washington, D. C.
822329. Physical culture appliance. Margaret A. Wilcox, Chicago.
822809. Combined reading and invalid table. Wm. B. Young, Albion, N. Y.
823409. Vaginal irrigator. Thomas W. Heuston, Coffeyville, Kans.
823472. Making sulphuric anhydrid. Rudolf Knietsch, Ludwigshafen-on-the-Rhine, Germany.
823069. Vaginal syringe. John T. McCarthy, Baltimore.
822980. Water-ozonizing apparatus. Marius Otto, Paris, France.
823233. Chloroform dropper. Frederick Wachter, Jersey City, N. J.
824057. Invalid-bed. Wm. H. Armstrong, J. M. Pugh and R. W. Magee, Indianapolis.
823499. Surgical appliance. Ashbel P. Barlow, St. Joseph, Mich.
823500. Truss. Ashbel P. Barlow, St. Joseph, Mich.
823841. Combined fracture-bed and invalid's chair. James T. Boyd, Indianapolis.
823946. Inhaler and respirator. Edwin K. Hill, Valparaiso, Ind.
823873. Poison indicator. Phillip H. Jones, Lutcher, La.
823877. Surgical implement. Alonzo C. Kellogg, Portage, Wis.
824038. Clinical thermometer case. John F. Myers, Sodus, N. Y.